

## Using This Catalog

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This PDF catalog provides a variety of tools for locating our products. These tools, located to the left of your screen, are called *bookmarks*.

The **TABLE OF CONTENTS** bookmark contains a complete directory of products listed in alphabetical order.

The **PART NUMBER INDEX** bookmark lists all of our products by their Keystone part number.


The **PAGE NUMBER INDEX** allows you to go directly to any page in our catalog.

The **ENGINEERING DATA** bookmark takes you to a useful reference page which includes the Drill Size Diameter Table, the Millimeter Conversion Table, and the Screw/Stud Clearance Hole Table.


The  **BINOCULAR ICON** allows you to search this catalog by part number. Click the icon on the toolbar, type in the part number you are looking for and hit "find".


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## Using Bookmarks

To **open** a bookmark directory, click on the  symbol to its left.

In the **TABLE OF CONTENTS**, for example, you will see additional directories labeled "A" through "Z"...

- Open the "B" directory () and find the product category you are interested in. We'll use "BATTERY Contacts & Clips".
- Open the subcategory "Clips" to reveal the pages containing battery clips.
- By selecting "page 12" you are brought to page 12 of the catalog, but the **TABLE OF CONTENTS** bookmark directory will remain on the left-hand side of your screen. This feature allows you to review all pages of the catalog without "flipping" through it page by page.

To **close** an open bookmark directory, click on the  symbol to its left.

**Note:** All bookmark directories will return to their original closed position every time the PDF catalog is closed and reopened.

# INTERCONNECT COMPONENTS AND HARDWARE



CATALOG M1

**KEYSTONE**  
ELECTRONICS CORP.



Designers' Choice

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We reserve the right to change specifications on any and all items shown in this catalog or any supplements without prior notice providing the performance or appearance will not change the function of the item.

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FEDERAL SUPPLY CODE  
FSCM  
91833

## HOLDERS, CLIPS, CONTACTS, ACCESSORIES



Keystone offers the most complete, proven line of battery holders, components and hardware worldwide.

Designed and engineered for equipment manufacturers who produce electronic instruments, apparatus and systems, the prime feature of our products is their "high reliability". They maintain constant spring tension, assuring low contact resistance. This makes them ideally suited for applications such as electronic components, computers, office equipment, home and industrial controls, appliances, power tools, automotive, medical and defense electronics.

Pioneering new products to high standards of engineering excellence, our expertise is exemplified by the broad range of battery components we manufacture. We offer aluminum, steel and plastic holders; a wide range of clips, contacts and accessories, molded and stamped coin cell holders, battery connectors and battery snap-ons. All are available in stand alone and PC board configurations.

Our battery holders, components and hardware will accommodate "A" • "AA" "AAA" • "AAAA" • "N" • "C" • "D" • "9 Volt" • "Button" and "Coin Cell" sizes, in the complete range of energy systems - Alkaline, Lithium, NiCd, NiMH and Zinc type batteries.

**Custom designs and variations of our standard parts can be manufactured to meet your specific requirements.**



Designers' Choice

# COIN CELL PC BATTERY HOLDERS

## 20mm to 30mm Sizes



**SINGLE CELL HOLDER**  
(3-VOLT)

**DUAL CELL HOLDER**  
(6-VOLT)

Single and Dual "Printed Circuit" Cell Holders for Lithium Coin Cells. Designed for easy battery replacement. Will accommodate diameters from 12mm to 30mm and heights from 1.6mm to 7.7mm. Some holders will accept more than two cells if they fall within the heights specified.

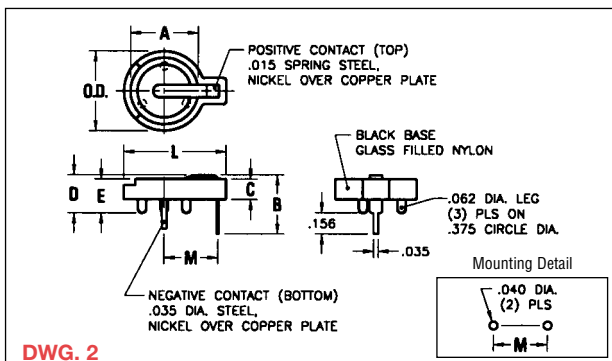
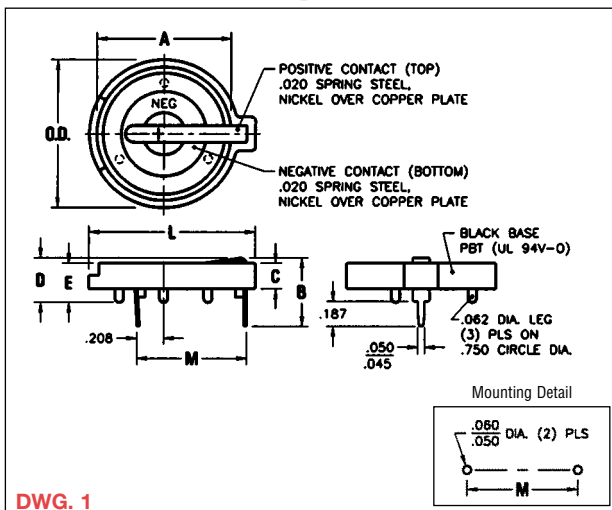
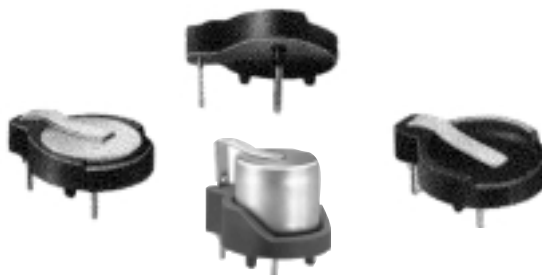
**IDEALLY SUITED FOR...**

- Duracell, Eveready, Panasonic, Ray-O-Vac, Sanyo, Varta, Toshiba, Seiko and other major battery manufacturers
- Computer memory, power transfer and back-up systems
- Video and telecommunications power back-up
- Preprogrammed video and electronic games
- Microprocessors and Microcomputer memory hold
- Notebook and laptop applications
- Emergency power systems
- Industrial and commercial security and alarm systems
- Communications power sources
- Miniaturized battery power devices

**DESIGN ADVANTAGES...**

- Low profile for high density packaging
- Reliable spring tension assures low contact resistance
- Retains battery securely to withstand shock and vibration
- Unique notched slots assure quick and easy battery insertion and replacement
- Base material UL Rated 94V-0. Impervious to most industrial solvents
- Operating temperature range: -60°F to +293°F (-50°C to +145°C)
- Advanced air-flow design pattern enhances air circulation around battery
- Nickel-over-copper plated spring steel contacts feature clearly marked polarities to help guard against improper insertion

## 12mm to 16mm & 1/3 "N" Sizes



CAT. NO.	DWG. NO.	NO. OF CELLS	DIMENSIONS								BATTERY CROSS REFERENCE	
			A	B	C	D	E	L	O.D.	M	CELL	
499	2	1	.495	.695	.250	.580	.350	.750	.593	.393	"1/3N"	DURACELL, EVEREADY, PANASONIC, RAY-O-VAC SANYO, SONY, SEIKO, TOSHIBA, VARTA DL 1/3N, K58L, CR 1/3N
500	2	1	.495	.435	.150	.280	.250	.750	.593	.393	12mm	BR1216, CR1216, BR1220, CL1220, CR1220, BR1225
501	2	2	.495	.505	.250	.380	.350	.750	.593	.393		
502	2	1	.635	.505	.150	.312	.250	.897	.750	.463	16mm	BR1616, CR1612, CR1616, CR1620, CR1632
103	1	1	.796	.513	.195	.335	.295	1.130	.896	.807	20mm	BR2016, CR2016, DL2016, BR2020, CL2020, BR2025, CR2025, DL2025, BR2032, CR2032, DL2032
106	1	1	.796	.513	.195	.335	.295	1.219	1.093	.807		
1026	1	2	.796	.630	.312	.452	.412	1.219	1.093	.807		
104	1	1	.911	.513	.195	.335	.295	1.150	1.000	.807		
107	1	1	.911	.513	.195	.335	.295	1.219	1.093	.807	23mm	BR2320, CL2320, CR2320, BR2325, CR2325, DL2325, BR2330, CL2330, BR2335, CR2354**
1027	1	2	.911	.630	.312	.452	.412	1.219	1.093	.807		
105	1	1	.985	.513	.195	.335	.295	1.219	1.093	.807	24mm	CR2430, DL2430, CR2450*, DL2450*, CR2477†
1025	1	2	.985	.630	.312	.452	.412	1.219	1.093	.807		
1025-7	1	1	.985	.681	.312	.503	.412	1.219	1.093	.807		
301	1	1	1.187	.513	.195	.335	.295	1.425	1.297	.807	30mm	BR3032

\* For Cat. No. 1025 (1) cell only. \*\* For Cat. No. 1027 (1) cell only. † For Cat. No. 1025-7 only.

# COIN CELL BATTERY HOLDERS

Designers' Choice

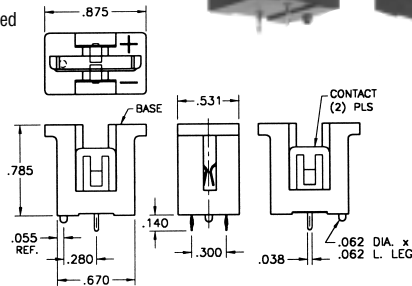


## VERTICAL 20mm COIN CELL HOLDERS

### COMPACT

This space saving vertical design features a rugged, lightweight body that mounts squarely and securely on PC boards for easy installation and replacement of batteries. Reliable spring tension assures low contact resistance.

- Accepts all major manufacturers' 20mm diameter batteries
- Molded notch prevents improper insertion of 2032 size cells
- Space saving design for high density packaging
- Retains cells securely, withstands shock and vibration
- Polarity clearly marked
- Mounts securely for wave soldering
- Temp range -60°F to +293°F (50°C to +145°C)



#### MATERIAL

Contacts: .012 Spring Steel, Tin over Nickel Plate

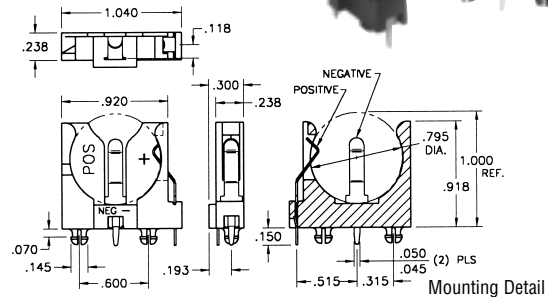
Base: PBT, UL Rated 94V-0

CAT. NO. 1067

### SLIMLINE

A "unique" space saving design. The battery is installed vertically from the top. The contacts of this holder are polarized to assure proper continuity and circuit protection.

- Polarized holder
- Mounts securely for wave soldering
- Reliable spring tension assures low contact resistance
- Retains 20mm batteries securely to withstand shock and vibration
- Temp range -60°F to +293°F (50°C to +145°C)



#### MATERIAL

Contacts: .016 Spring Steel, Tin over Nickel Plate

Base: PBT, UL Rated 94V-0

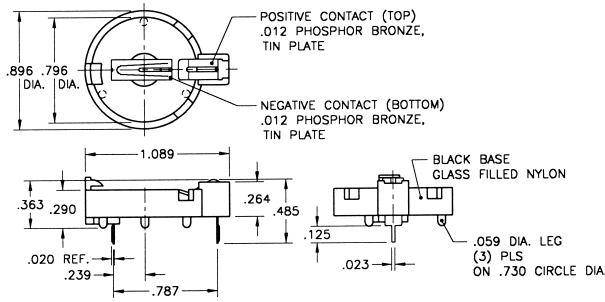
CAT. NO. 1065

## COMPACT 20mm COIN CELL HOLDER



- Suitable for 2025 and 2032 cells
- "Pop-in" design using minimum space
- Finger pressure lever disengages battery
- Reliable spring tension assures low contact resistance
- Retains batteries securely to withstand shock and vibration
- Temp range -60°F to +293°F (50°C to +145°C)

The "Ultimate" in space saving design. This 20mm coin cell holder allows "pop-in" entry of batteries using the minimum amount of space. Finger pressure lever allows batteries to disengage from holder.



#### MATERIAL

Contacts: .012 Phosphor Bronze, Tin Plate

Base: Glass Filled Nylon, UL Rated 94V-0

CAT. NO. 1066

## SURFACE MOUNT COIN CELL HOLDERS



Available on Tape and Reel

### SMT Design - Holders for 20mm and 23mm Lithium Coin Cell Batteries

- Temp. range -60°F to +540°F (-50°C to +282°C)
- Ideal for memory back-up applications
- Polarity clearly marked (+)
- UL approved material, 94V-0
- Rugged construction, light weight
- Compatible with vacuum and mechanical pick & place assembly systems
- Low profile for high density packaging
- SMT solder tail with "Flow-Hole" design for increased joint strength
- Viewable solder tails assures reliable joint inspection
- Safe for all soldering & reflow operations
- All conductive polystyrene carrier tape meets ANSI/EIA - 481 standard

#### SMALL PAD PATTERN

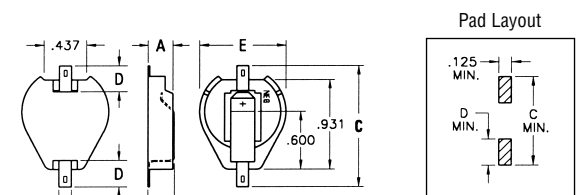
CAT. NO.	ON TAPE	CELLS	A	B	C	D	E	CELL	BATTERY
1061	1061TR	1	.256	.290	1.015	.156	.896	20mm	2016*, 2020, 2025, 2032
1062	1062TR	2	.375	.406	1.015	.156	.896	23mm	2320, 2325, 2330
1071	1071TR	1	.256	.290	1.015	.156	1.000		

\*Cat. No. 1061 (1 or 2 cells); Cat. No. 1062 (3 cells)

#### LARGE PAD PATTERN

CAT. NO.	ON TAPE	CELLS	A	B	C	D	E	CELL	BATTERY
1063	1063TR	1	.256	.290	1.250	.278	.896	20mm	2016*, 2020, 2025, 2032
1064	1064TR	2	.375	.406	1.250	.278	.896	23mm	2320, 2325, 2330
1073	1073TR	1	.256	.290	1.250	.278	1.00		

\*Cat. No. 1063 (1 or 2 cells); Cat. No. 1064 (3 cells)



MATERIAL: Contacts: .015 Steel, Tin Plate Base: Nylon, Stanyl-46

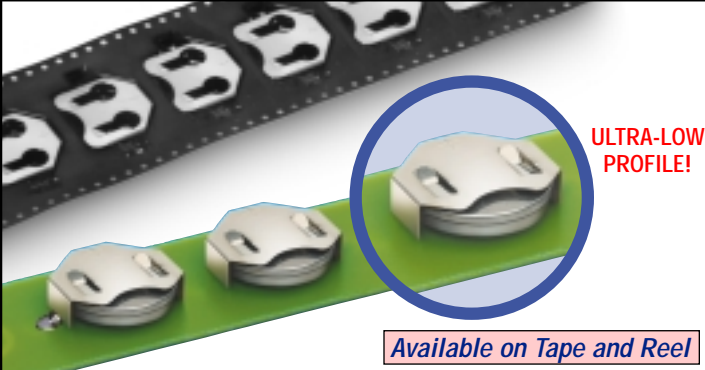
Tape & Reel Spec's: 44mm wide; 32mm pitch; 13 inch reel (200 pieces per reel)



Designers' Choice

# COIN CELL RETAINERS & HOLDERS

## SURFACE & THRU HOLE MOUNT COIN CELL RETAINER CONTACTS



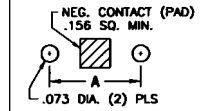
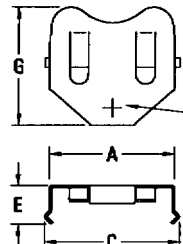
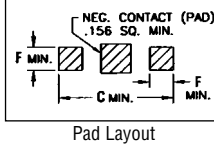
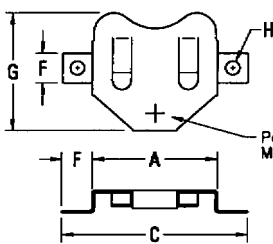
**ULTRA-LOW PROFILE!**

Available on Tape and Reel

### COMPACT CONTACTS

Economical and reliable retainer contacts are designed for quick and easy battery installation and replacement. Perfect for memory back-up applications. Surface and thru hole mount retainer contacts are available for 6.8mm to 24mm lithium coin cell batteries.

- Low profile for densely packed PCBs
- Retains cell securely, withstands shock & vibrations
- Reliable dual spring contacts assure low contact resistance
- Polarity clearly marked (+)
- Stable thru mount legs for increased strength
- Balanced & lightweight for reliable pick-up & placement
- Compatible with vacuum and mechanical pick & place assembly systems
- "Flow-Hole" SMT solder tail design for increased joint strength
- Viewable solder tails assures reliable joint inspection
- All conductive polystyrene carrier tape meets ANSI/EIA - 481 standard



Mounting Detail

Also Available:  
Optional negative bottom contact.  
(Cat. No. 2990, see page 9)

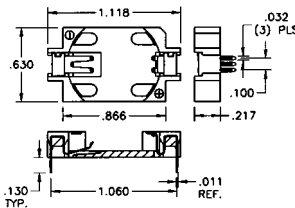
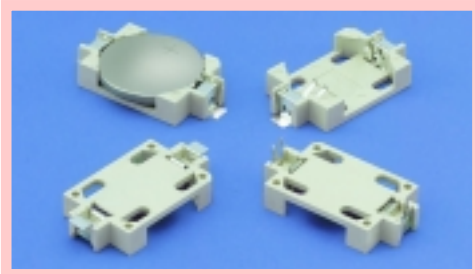
DWG. 1 - SURFACE MOUNT (SMT) MATERIAL: .010 Phosphor Bronze, Nickel Plate

DWG. 2 - THRU HOLE MOUNT (THM) MATERIAL: .010 Phosphor Bronze, Nickel Plate

CAT. NO.	ON TAPE & REEL	DWG. NO.	MTG. TYPE	A	B	C	D	E	F	G	H DIA.	CELL DIA.	BATTERY REFERENCE	TAPE & REEL SPEC'S
2998	2998TR	1	SMT	.315	.197	.421	.114	—	.070 × .200	.315	.064	6.8mm	MC621, V364, SC621	24mm wide; 12mm pitch; 13 inch (1250 pieces per reel)
3000	3000TR	1	SMT	.520	.281	.745	.125	—	.125	.500	.047	12mm	BR1216, CR1216, BR1220, CL1220, CR1220, BR1225	32mm wide; 16mm pitch; 13 inch reel (1000 pieces per reel)
3001	—	2	THM	.520	.281	.585	.118	.210	.062	.500	—	16mm	BR1616, CR1612, CR1616, CR1620, CR1632	44mm wide; 24mm pitch; 13 inch reel (600 pieces per reel)
3012	3012TR	1	SMT	.664	.250	.914	.156	—	.125	.594	.047	20mm	BR2016, CR2016, DL2016, BR2020, CL2020, BR2025, CR2025, DL2025, DR2032, CR2032, DL2032	44mm wide; 24mm pitch; 13 inch reel (500 pieces per reel)
3013	—	2	THM	.664	.250	.723	.145	.265	.062	.594	—	23mm	BR2320, CL2330, CR2320, BR2325, CR2325, DL2325	56mm wide; 32mm pitch; 13 inch reel (400 pieces per reel)
3002	3002TR	1	SMT	.831	.371	1.210	.156	—	.200	.775	.093	23mm	CR2354, DL2354	56mm wide; 32mm pitch; 13 inch reel (200 pieces per reel)
3003	—	2	THM	.831	.371	.890	.145	.265	.062	.775	—	24mm	CR2430, DL2430	56mm wide; 32mm pitch; 13 inch reel (400 pieces per reel)
3004	3004TR	1	SMT	.939	.371	1.339	.145	—	.200	.939	.093	24mm	CR2450, DL2450	56mm wide; 32mm pitch; 13 inch reel (200 pieces per reel)
3005	—	2	THM	.939	.371	1.004	.145	.256	.062	.939	—	24mm	—	—
3010	3010TR	1	SMT	.939	.371	1.339	.240	—	.200	.819	.093	24mm	—	—
3011	—	2	THM	.939	.371	1.004	.240	.351	.062	.819	—	24mm	—	—
3006	3006TR	1	SMT	1.000	.371	1.400	.156	—	.200	.918	.093	24mm	—	—
3007	—	2	THM	1.000	.371	1.065	.145	.265	.062	.918	—	24mm	—	—
3008	3008TR	1	SMT	1.000	.500	1.400	.230	—	.200	.890	.093	24mm	—	—
3009	—	2	THM	1.000	.500	1.059	.230	.350	.062	.890	—	24mm	—	—

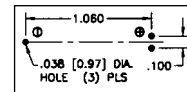
## LOW PROFILE SURFACE & THRU HOLE MOUNT COIN CELL HOLDERS

Designed for quick and easy installation and replacement of 2032 coin cell lithium batteries. The contacts of these holders are polarized to assure proper continuity and circuit protection.

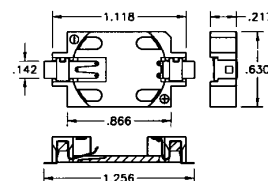


### Thru Hole Mount

Mounting Detail

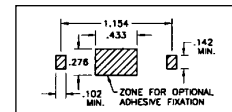


CAT. NO. 1059 (Bulk)



### Surface Mount

Pad Layout



CAT. NO. 1060 (Bulk)

CAT. NO. 1060TR (Tape & Reel)

Tape & Reel Spec's: 44mm wide; 24mm pitch; 13 inch reel (500 pieces per reel)

- Polarized Holder
- Retains cell securely to withstand shock and vibration
- Reliable dual spring contacts assure low contact resistance
- Low Profile for densely packaged PCB's
- Compatible with vacuum and mechanical pick & place assembly systems
- Conductive polystyrene carrier tape meets ANSI/EIA - 481 standard

### MATERIAL

Contacts: .006 Phosphor Bronze, Electro-Solder over Nickel Plate  
Base: Glass Filled LCP, UL Rated 94V-0

# BATTERY CONTACTS

Designers' Choice



## "A" • "AA" • "AAA" • "N" SIZE PC BUTTON & SPRING CONTACTS



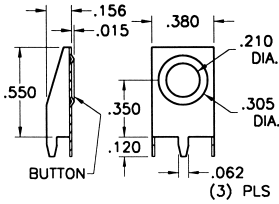
MATERIAL: Frame: .015 Steel, Tin Plate

- Ideal contacts for "A" • "AA" • "AAA" • "N" size batteries.
- Space saving design installs directly onto the PC board
- Ideal for self-contained battery compartments
- Contacts available for .062 and .093 thick PC boards
- Reliable spring and/or button assures low contact resistance

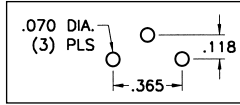


MATERIAL: Frame: .015 Steel, Tin Plate  
Uses Cat. No. 211 Spring Contact

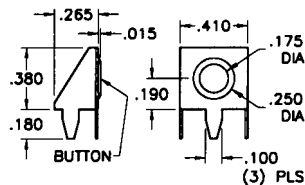
### (+) Positive Button



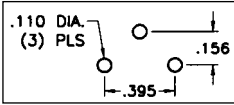
Mounting Detail



CAT. NO. 595 - For "A"

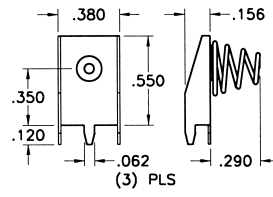


Mounting Detail

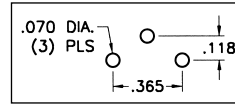


CAT. NO. 637 - For "AA" • "AAA" • "N"

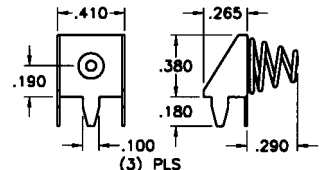
### (-) Negative Spring



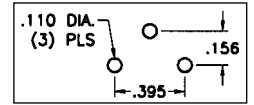
Mounting Detail



CAT. NO. 628 - For "A"



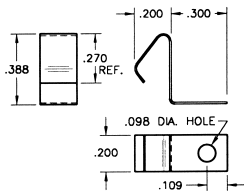
Mounting Detail



CAT. NO. 629 - For "AA" • "AAA" • "N"

## SURFACE MOUNT BATTERY CONTACTS

### For "AAA" • "AAAA"

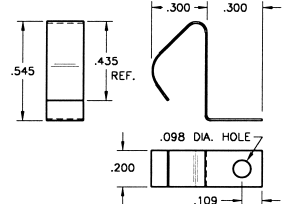


CAT. NO. 5230  
CAT. NO. 5230TR



Tape and Reel Spec's: 24mm wide; 12mm pitch;  
13 inch reel (400 pieces per reel)

### For "A" • "AA" • "9V"



CAT. NO. 5231  
CAT. NO. 5231TR



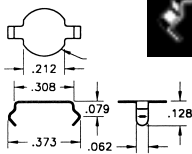
Tape and Reel Spec's: 32mm wide; 12mm pitch;  
13 inch reel (400 pieces per reel)

• ECONOMICAL • SPACE SAVING

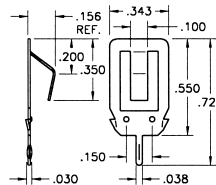
## PC BATTERY CONTACTS

• Ideal for self-contained battery compartments  
• Contact us for modifications and custom design

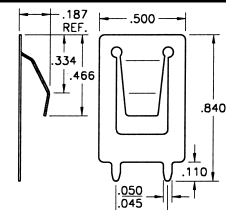
Mounting Detail



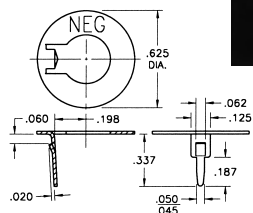
CAT. NO. 2990 .008 Thick, Phosphor Bronze, Nickel Plate



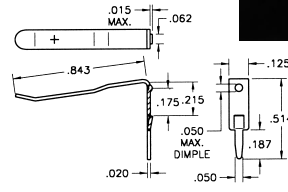
CAT. NO. 108-2 .012 Thick, Spring Steel, Nickel Plate



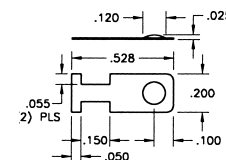
CAT. NO. 109-2 .012 Thick, Spring Steel, Nickel Plate



CAT. NO. 105-3 .020 Thick, Spring Steel, Nickel Plate



CAT. NO. 105-2 .020 Thick, Spring Steel, Nickel Plate



CAT. NO. 230-1 .008 Thick, Spring Steel, Nickel Plate







Designers' Choice

# BATTERY CONTACTS

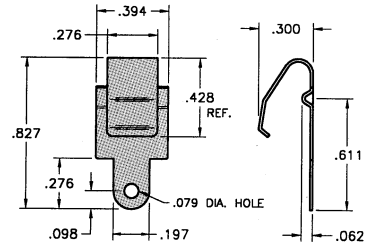
## BATTERY SPRING & BUTTON CONTACTS

- Economical and reliable contacts are ideal for molded cases with self contained battery compartments
- Single and dual contact designs available for "A", "AA", "AAA", "AAAA" & "N" size batteries
- "Solder tab" design for either wire lead or PC mounting
- Unique spring contacts adjust to variations in battery lengths
- Reliable spring contacts assure low contact resistance and a dependable connection
- Space saving, economical, excellent mechanical construction

## SPRING CONTACT FOR "A" • "AA" • "9V" SIZES

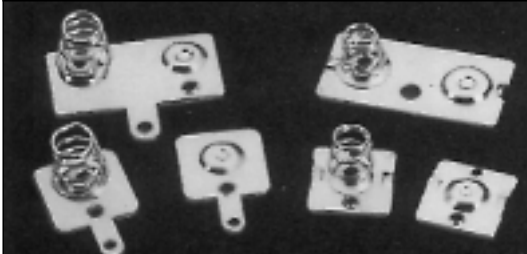


MATERIAL: .012 Phosphor Bronze, Nickel Plate



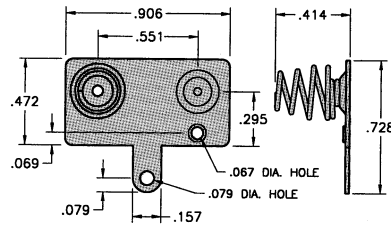
CAT. NO. 5209

## BATTERY CONTACTS FOR "A" • "AA" SIZES



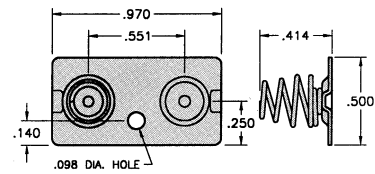
MATERIAL:  
Plate: .020 Steel, Nickel Plate  
Spring: Spring Steel, Nickel Plate

Dual Contact w/Tabs



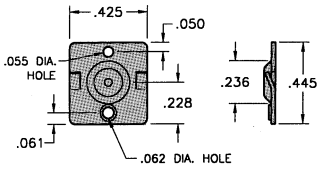
CAT. NO. 5211

Dual Contact



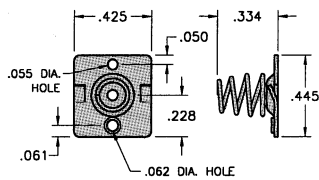
CAT. NO. 5212

(+) Positive Button



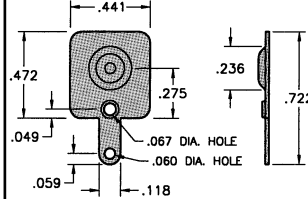
CAT. NO. 5224

(-) Negative Spring



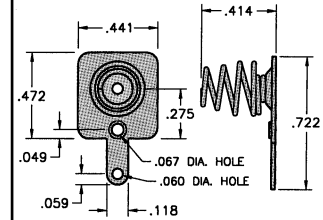
CAT. NO. 5202

(+) Positive Button w/Tabs



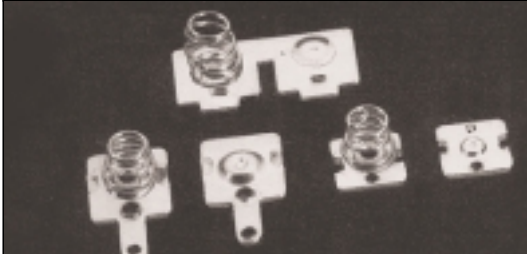
CAT. NO. 5223

(-) Negative Spring w/Tabs



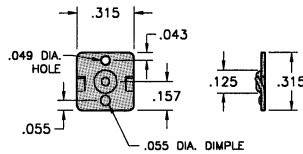
CAT. NO. 5201

## BATTERY CONTACTS FOR "AAA" • "AAAA" • "N" SIZES



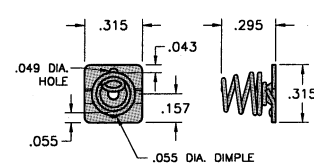
MATERIAL:  
Plate: .020 Steel, Nickel Plate  
Spring: Spring Steel, Nickel Plate

(+) Positive Button



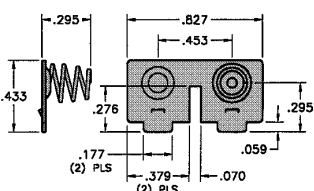
CAT. NO. 5225

(-) Negative Spring

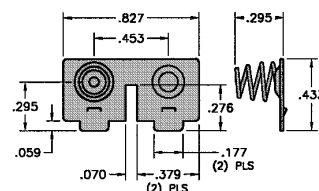


CAT. NO. 5203

Dual Contact

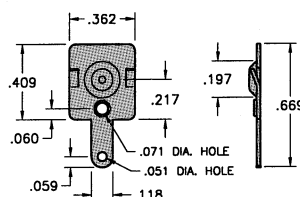


CAT. NO. 5214 (Left Side)



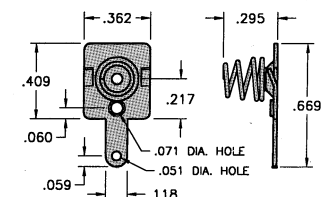
CAT. NO. 5213 (Right Side)

(+) Positive Button w/Tabs



CAT. NO. 5226

(-) Negative Spring w/Tabs



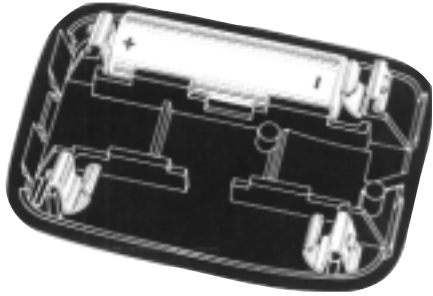
CAT. NO. 5204

# BATTERY CONTACTS

Designers' Choice

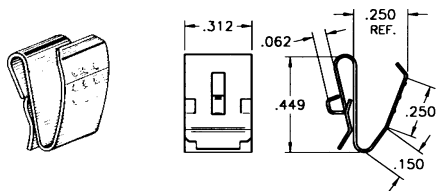


## SNAP-ON CONTACTS FOR "A" • "AA" • "AAA" • "AAAA" • "N" SIZES



- Economical and reliable contacts are ideal for molded cases with self contained battery compartments
- Single & dual contact designs available for "A" • "AA" • "AAA" • "AAAA" • "N" size batteries
- Solder "ear" to facilitate soldering of wire lead
- Unique spring tension contact adjusts to variations in battery length
- Reliable spring tension contacts assure low contact resistance
- Clips easily onto .060 to .070 thick panel edges
- Sharp barbs securely anchor contact in place

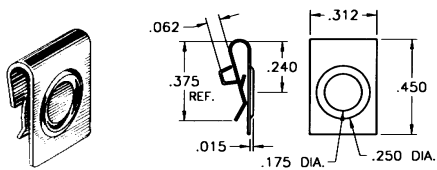
### For "A" • "AA"



CAT. NO. 209

MATERIAL  
.012 Spring Steel,  
Nickel Plate

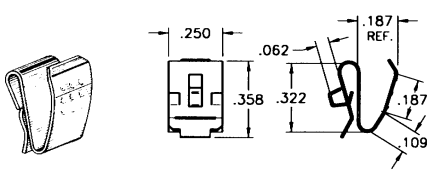
### For "A" • "AA"



CAT. NO. 228

MATERIAL  
.010 Spring Steel,  
Nickel Plate

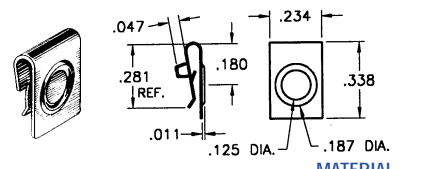
### For "AAA" • "AAAA" • "N"



CAT. NO. 204

MATERIAL  
.010 Spring Steel,  
Nickel Plate

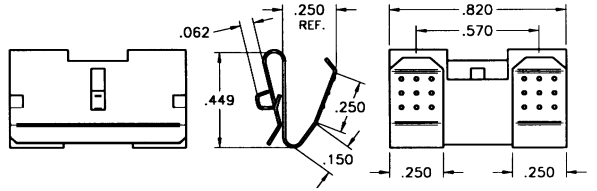
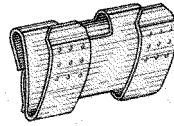
### For "AAA" • "AAAA" • "N"



CAT. NO. 238

MATERIAL  
.010 Spring Steel,  
Nickel Plate

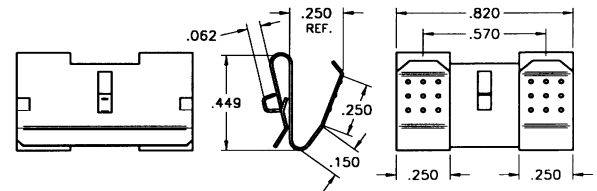
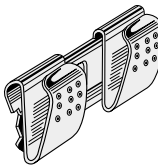
### For "A" • "AA"



CAT. NO. 210

MATERIAL: .012 Spring Steel, Nickel Plate

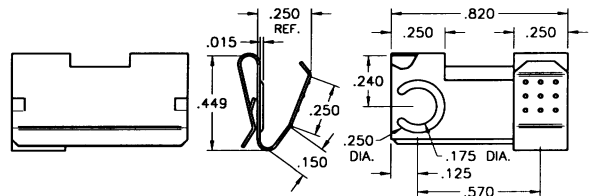
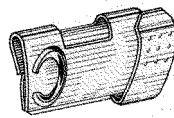
### For "A" • "AA"



CAT. NO. 288

MATERIAL: .012 Spring Steel, Nickel Plate

### For "A" • "AA"

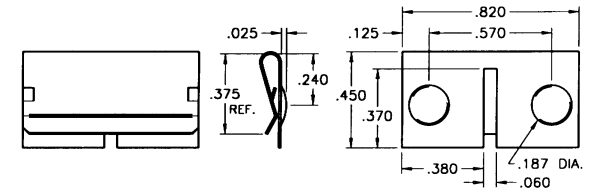


CAT. NO. 290 - Left (shown)

CAT. NO. 291 - Right

MATERIAL: .012 Spring Steel, Nickel Plate

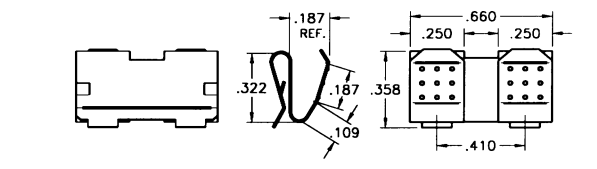
### For "A" • "AA"



CAT. NO. 292

MATERIAL: .010 Spring Steel, Nickel Plate

### For "AAA" • "AAAA" • "N"



CAT. NO. 202

MATERIAL: .010 Spring Steel, Nickel Plate

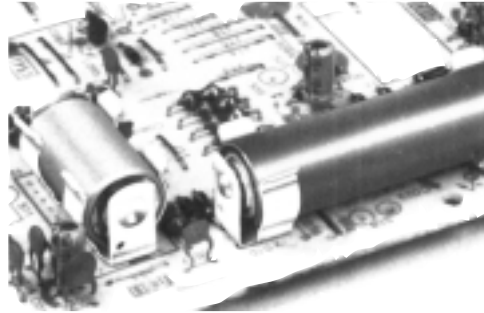


Designers' Choice

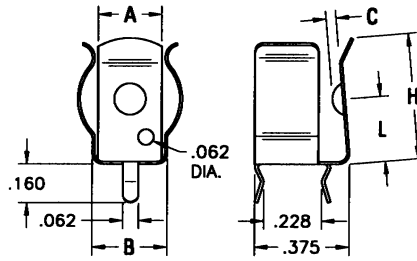
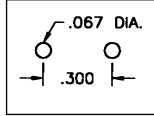
# BATTERY CLIPS & CONTACTS

## SNAP-IN PC BATTERY CLIPS FOR "A" • "AA" • "AAA" • "AAAA" • "N" SIZES

- Available for "A" • "AA" • "AAA" • "AAAA" • "N" size batteries
- Mounts securely to the PC board with advanced "Snap-In" design for thru hole mounting
- "Snap-In" clip holds firmly for wave soldering
- Reliable spring tension assures low contact resistance
- Low profile, economical design
- Retains battery securely to withstand shock and vibration



Mounting Detail



MATERIAL: Spring Steel, Nickel Plate

CAT. NO.	BATTERY SIZE	BATTERY DIA.	A	B	C	H	L	MAT'L THICK
52	"A" • "AA"	No Ears	.250	—	.040	.500	.260	.010
92	"A" • "AA"	.531-.665	.312	.375	.060	.593	.359	.012
2915	"A" • "AA"	.531-.665	.312	.375	.060	.593	.359	.015
82	"AAA" • "N"	.375-.460	.250	.300	.040	.500	.260	.010
51	"AAAA"	.300-.350	See drawing below					.010

New



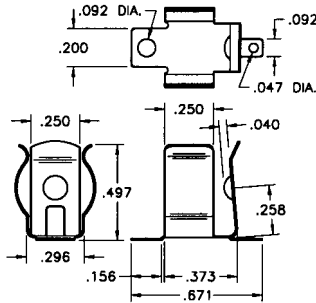
No Ears

## SURFACE MOUNT BATTERY CLIP

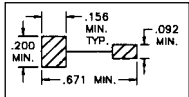
For "AAA" • "N"



- Low profile for densely packed PCBs
- "Flow-Hole" SMT solder tail design for increased joint strength
- Retains cell securely, withstands shock and vibration
- All conductive polystyrene carrier tape meets ANSI/EIA -481 standard



Pad Layout



MATERIAL: .010 Spring Steel, Tin Plate  
Tape & Reel Specs: 32mm wide; 16mm pitch; 13 inch reel, (300 pieces per reel)

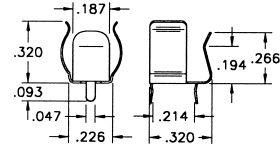
CAT. NO. 55 (Bulk)

CAT. NO. 55TR (Tape and Reel)

"AAAA"

MATERIAL: .010 Spring Steel, Nickel Plate

CAT. NO. 51



Mounting Detail



## ECONOMY CLIPS FOR "AA" • "C" • "D" SIZES

Designed for mounting in self-contained, non-metallic battery compartments. Reliable spring tension assures low contact resistance. Recessed contact holds battery in place. All clips have anti-rotation tab.

MATERIAL: .016 Spring Steel, Nickel Plate

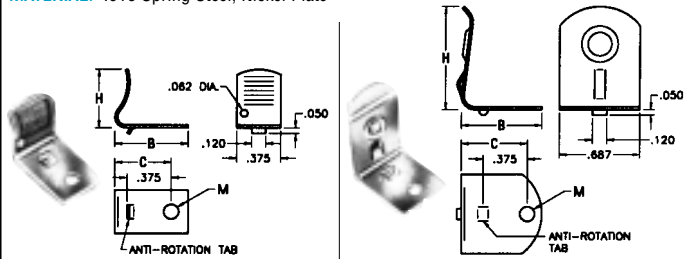
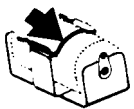


FIG. 1

FIG. 2

CAT. NO.	FIG. NO.	B	C	H	M MTHG. HOLE	CELL SIZE
206	1	.625	.480	.500	.128	AA
207	2	.687	.547	.875	.128	C
208	2	.750	.562	1.260	.128	D

## BATTERY RETAINER CLIPS



- Prevents battery from loosening in battery holder
- Retainer clip slips on the ears of the battery holder clip
- Manufactured from Spring Steel, Nickel plate

CAT. NO. 61

Retainer for "AA" or cells with diameters of .532" to .562". Used with Keystone Battery Clips Cat. No. 91, 92, 92-015, 95, 99 and 100.

CAT. NO. 62

Retainer for "C" cells or similar size batteries to 1.032" diameter. Used with Keystone Battery Clips Cat. No. 86, 87, 93 and 222.

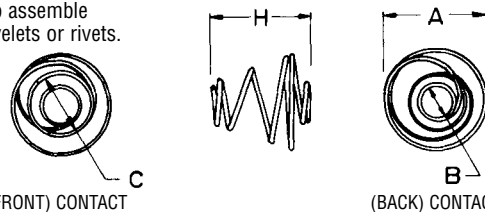
CAT. NO. 63

Retainer for "D" cells or similar size batteries to 1.343" diameter. Used with Keystone Battery Clips Cat. No. 88, 89 and 94.

## BATTERY SPRING CONTACTS

For "A" • "AA" • "C" • "D" Sizes

Easy to assemble with eyelets or rivets.



(FRONT) CONTACT

(BACK) CONTACT

CAT. NO.	H	A	B	C	MATERIAL
211 ("A" • "AA")	.290	.335	.100	.140	.025 Dia. Spring Steel, Nickel Plate
211-D ("C" • "D")	.850	.650	.162	.300	.040 Dia. Spring Steel, Nickel Plate

# BATTERY & COMPONENT CLIPS

Designers' Choice



## STEEL SPACE SAVER BATTERY CLIPS

FOR "AA" • "C" • "D" SIZES

IDEAL FOR • CARBON ZINC • NiCd • NiMH • LITHIUM • ALKALINE BATTERIES



Available with insulated or non-insulated contact.  
Positive contact grips battery securely.

**SPECIFICATIONS**

Clips: Spring Steel, Nickel Plate  
Contact Eyelets: Brass, Nickel Plate  
Insulating Washers: Moisture Proof, Resin Impregnated Fibre  
Terminal Lugs: Brass, Tin Plate

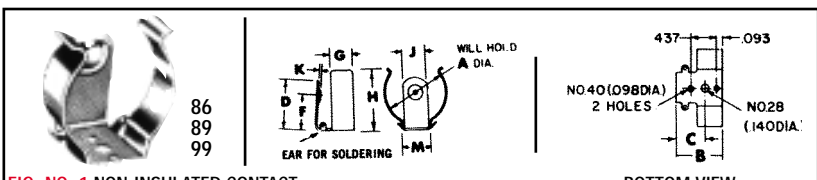


FIG. NO. 1 NON-INSULATED CONTACT

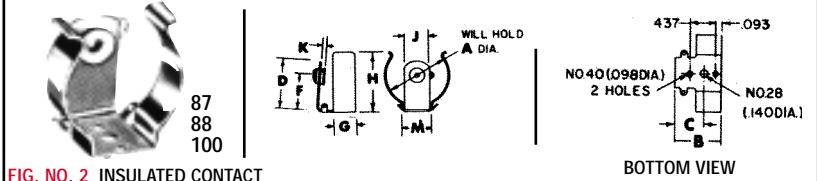


FIG. NO. 2 INSULATED CONTACT

CAT. NO.	FIG. NO.	CONTACT	A DIA. MIN. - MAX.	FOR CELLS	± .015		± .010		± .005		± .020		STEEL THICKNESS	
					B	C	D	F	G	H	J	K		M
86	1	NON-INSULATED	.875 to 1.125	C	.703	.391	.812	.593	.375	.937	.500	.050	.605	.020
87	2	INSULATED	.875 to 1.125	C	.703	.391	.812	.593	.375	.937	.500	.070	.605	.020
88	2	INSULATED	1.187 to 1.350	D	.775	.463	1.075	.750	.437	1.187	.500	.070	.609	.020
89	1	NON-INSULATED	1.187 to 1.350	D	.775	.463	1.075	.750	.437	1.187	.500	.050	.609	.020
99	1	NON-INSULATED	.531 to .650	AA	.703	.391	.609	.375	.375	.609	.312	.050	.353	.015
100	2	INSULATED	.531 to .650	AA	.703	.391	.609	.375	.375	.609	.312	.070	.353	.015

## ALUMINUM & STEEL COMPONENT CLIPS

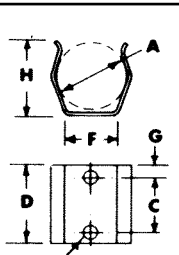
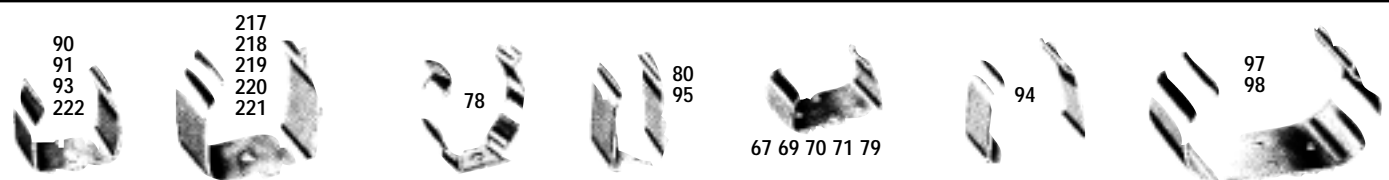


FIG. 1

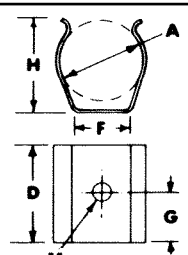


FIG. 2

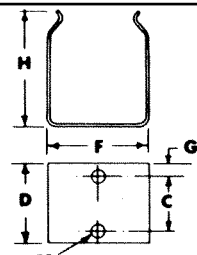


FIG. 3

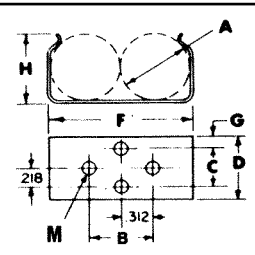


FIG. 4

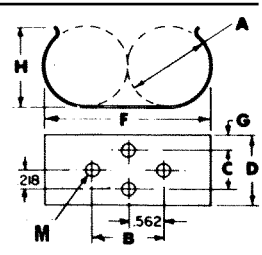


FIG. 5

Precision made spring clips are available in a wide range of sizes. These clips will hold round, square and rectangular batteries or components with similar dimensions. Clips are manufactured from Aluminum or Spring Steel.

**MATERIAL**

Steel Clips: Spring Steel, Nickel Plate  
Aluminum Clips: 2024-T3

\*These clips will hold batteries or components of similar dimensions.

CAT. NO.	FIG. NO.	A MIN MAX DIA. OR SIZE	*FOR CELLS	± .005		± .005		± .010		± .015	± .003 M MTG HOLES.	MATERIAL
				B	C	D	F	G	H			
67	3	.375 x .125	CRYSTAL	—	.187	.375	.410	.093	.210	2#51(.067)	.016 Steel	
69	4	.562 (2)	(2) AA	.625	.437	.625	1.125	.093	.562	4#40(.098)	.015 Steel	
70	4	.656 (2)	(2) RM12	.625	.437	.625	1.343	.093	.740	4#40(.098)	.025 Alum.	
71	3	.593 x 1.031	"9" VOLT	—	.437	.625	1.031	.093	.687	2#40(.098)	.015 Steel	
78	2	1.187 to 1.350	D	—	—	.500	.562	.250	1.218	1#29(.136)	.020 Steel	
79	4	.650 x 1.280	TR146X	.625	.437	.625	1.050	.093	.765	4#40(.098)	.015 Steel	
80	3	.650 x 1.280	"9" VOLT	—	.437	.625	.675	.093	1.187	2#40(.098)	.015 Steel	
90	1	.375 to .468	AAA	—	.437	.625	.312	.093	.453	2#40(.098)	.020 Alum.	
91	1	.531 to .656	AA	—	.437	.625	.406	.093	.562	2#40(.098)	.020 Alum.	
93	1	.875 to 1.125	C	—	.437	.625	.937	.093	.921	2#40(.098)	.020 Alum.	
94	3	1.187 to 1.375	D	—	.437	.625	1.250	.093	1.218	2#40(.098)	.032 Alum.	
95	3	.625 x 1.000	"9" VOLT	—	.437	.625	.656	.093	1.125	2#40(.098)	.020 Alum.	
97	5	1.031 (2)	(2) C	—	.437	.625	2.062	.093	1.125	2#40(.098)	.020 Alum.	
98	5	1.312 (2)	(2) D	1.125	.437	1.000	2.656	.281	1.437	4#40(.098)	.032 Alum.	
217	2	1.375 to 1.500	NiCd	—	—	.812	1.218	.406	1.430	1#22(.157)	.025 Steel	
218	2	1.437 to 1.687	NiCd	—	—	.812	1.375	.406	1.531	1#22(.157)	.025 Steel	
219	2	2.000 to 2.500	NiCd	—	—	.812	1.687	.406	2.156	1#22(.157)	.025 Steel	
220	2	.187 to .203	5mm	—	—	.315	.158	.157	.280	1#42(.093)	.010 Steel	
221	2	.859 to .890	.875	—	—	.468	.828	.234	.906	1#22(.157)	.020 Steel	
222	1	.875 to 1.125	C	—	.437	.625	.937	.093	.921	2#40(.098)	.020 Steel	



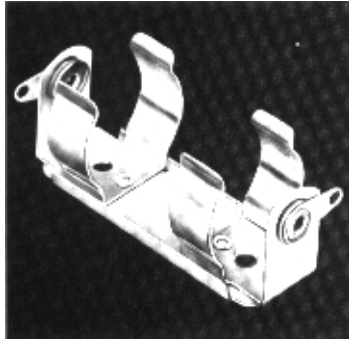


Designers' Choice

# STEEL BATTERY HOLDERS

## RUGGED STEEL BATTERY HOLDERS

An established design that has gained wide acceptance for commercial and military applications. Batteries are held under constant spring tension assuring low contact resistance. Retainer clips are available to lock batteries in place and prevent shifting or loosening of the batteries. Recommended for use where shock or severe vibration is encountered. Special fabrication for more than four batteries or variations from standard stock parts can be assembled to meet your requirements.



- Ideal for NiCd, Alkaline, NiMH, Carbon, Zinc and Lithium Cells
- Corrosion Resistant, Nickel Plate
- Brass Contacts, Nickel Plate
- Moisture Proof Resin Impregnated, Fibre Insulating Washers

### 1100 SERIES

(GROUNDED ONE SIDE)



DIMPLE CONTACT

INSULATED CONTACT

### 2100 SERIES

(FULLY INSULATED)



INSULATED CONTACTS

### INSULATOR TUBES SUPPLIED FOR 2-3-4 CELLS END TO END

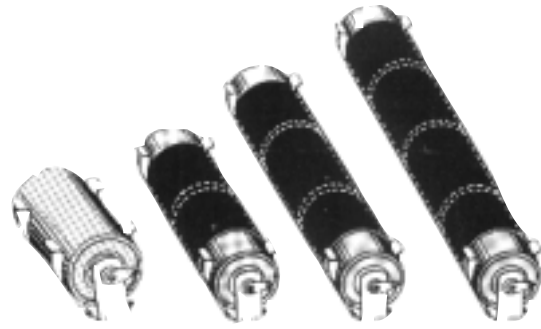


FIG. 19

FIG. 20

FIG. 21

FIG. 22

PHENOLIC BASE

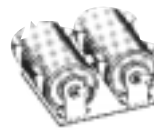


FIG. 23

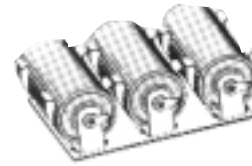


FIG. 24

PHENOLIC BASE



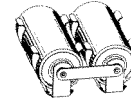
FIG. 25

### MODIFICATIONS AVAILABLE

Use our engineering services for your custom battery holders or modifications to our standard products.

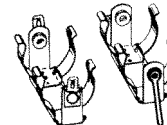
#### JUMPERS

Jumpers permit cost saving and eliminates wiring.



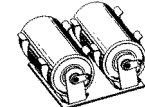
#### SPECIAL LUGS

Printed Circuit, Solderless or Quick-Fit Lugs available for your special connection requirements.



#### MULTIPLE UNITS

Jumpers, special lugs and polarized contacts available for custom applications.



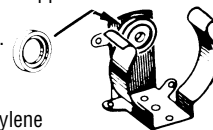
#### POLARIZED CONTACTS

Assure proper battery insertion and correct polarity.



## INSULATED POLARIZING WASHERS

Prevents improper connection of battery which may cause damage to electronic equipment. Washers hold securely when snapped over eyelets. Used on our standardized battery holders. For AA, C & D cells.



**MATERIAL:** Molded Polyethylene

**CAT. NO. 59 (RED) CAT. NO. 60 (BLACK)**

1100 SERIES		2100 SERIES		BATTERY CROSS REFERENCE			
ONE CONTACT INSULATED	ALL CONTACTS INSULATED	FIG. NO.	HOLDS NO. OF CELLS	All Batteries listed within boxes are in the same size group			
CAT. NO.	CAT. NO.			EVEREADY	DURACELL	RAY-O-VAC	NEDA
<b>"AA" CELL HOLDERS</b>				(BATTERY SIZE $\frac{.531}{.565}$ O.D. $\times$ $\frac{1.906}{1.988}$ H)			
1139	2139	19	1	E9, EV15, EN91, CH15, E133, E133N, E177, 505, 523, 1015, 1215	ZM9, RM12R, NC15AA, M15F, M15AA, TR133R, TR177, M505, MN1500, PC1500	5AA, 615, 815, 7AA	15, 15A, 15C, 15D, 15F, 15M, 15NC, 221, 1101M, 1113M, 1113M, 1306AP, 1306M, 1314M, 1606M
—	2140*	23	2				
—	2171*	24	3				
—	2182*	25	4				
1189	2189	20	2				
1191	2191	21	3				
1194	2194	22	4				
<b>"C" CELL HOLDERS</b>				(BATTERY SIZE $\frac{.875}{1.125}$ O.D. $\times$ $\frac{1.875}{1.969}$ H)			
1173	2173	19	1	CH35, E93, 935, 1235, EV35, EN93	M14F, M14HD, NC14C, TR286, MN1400, PC1400	1C, 614, 814	14A, 14C, 14D, 14F, 14NC, 1600M
—	2174*	23	2				
—	2187*	24	3				
—	2188*	25	4				
1185	2185	20	2				
1195	2195	21	3				
1198	2198	22	4				
<b>"D" CELL HOLDERS</b>				(BATTERY SIZE $\frac{1.187}{1.375}$ O.D. $\times$ $\frac{2.312}{2.412}$ H)			
1175	2175	19	1	CH50, E95, 950, 1250, EV50, EN95	M13F, NC13D, S42, M13HD, TR289, MN1300, PC1300	2D, 6D, 613, 813	13A, 13C, 13D, 13F, 13NC, 1115M, 1810M
—	2176*	23	2				
—	2190*	24	3				
—	2192*	25	4				
1186	2186	20	2				
1199	2199	21	3				
1162	2162	22	4				

\*Clips mounted on Phenolic 1/16" thick

# STEEL BATTERY HOLDERS

Designers' Choice

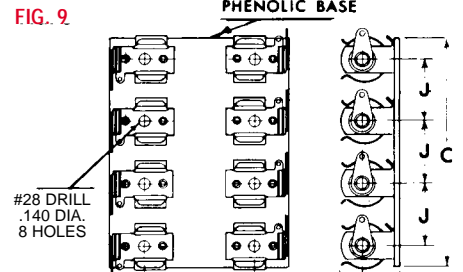
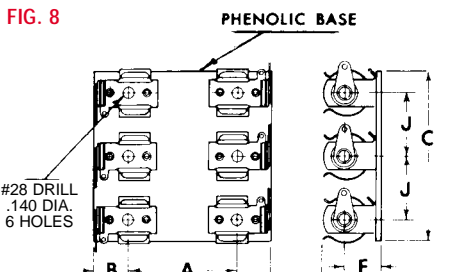
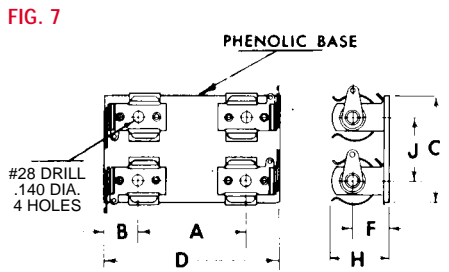
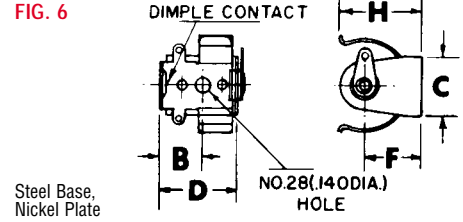
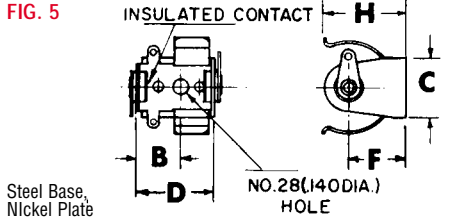
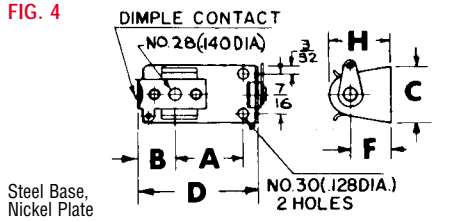
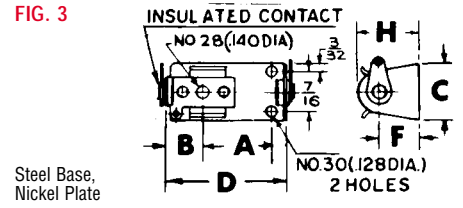
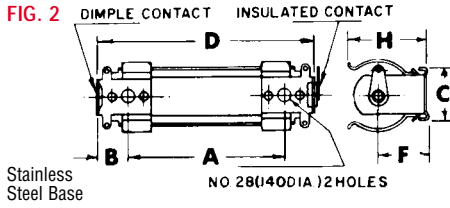
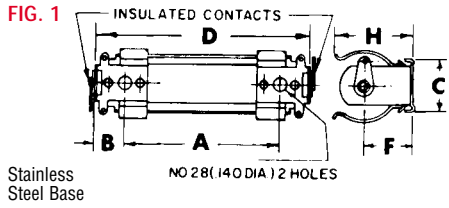


## MATERIAL SPECIFICATIONS

Clips: Spring Steel, Nickel Plate  
 Contact Eyelets: Brass, Nickel Plate  
 Insulating Washers: Moisture Proof, Resin Impregnated Fibre

Terminal Lugs: Brass, Tin Plate  
 Phenolic Base: Type PBE, Per MIL-P-3115C  
 Base: Ribbed Stainless Steel, For Added Support

## DIMENSIONAL DRAWINGS FOR STEEL BATTERY HOLDERS



CAT. NO.	FIG.	±.005 A	±.015 B	±.010 C	±.015 D	±.010 F	±.020 H	CAT. NO.	FIG.	±.005 A	±.015 B	±.010 C	±.015 D	±.010 F	±.020 H	±.005 J
*1101	4	.281	.391	.625	.812	.437	.656	*2116	3	.718	.391	.625	1.281	.437	.656	—
*1104	6	—	.468	.625	.890	.750	1.281	*2125	1	3.906	.391	.687	4.687	.437	.656	—
*1109	2	1.156	.391	.687	1.937	.437	.656	*2132	3	.937	.391	.625	1.484	.437	.656	—
*1110	2	1.562	.391	.687	2.343	.437	.656	*2134	1	2.000	.391	.687	2.781	.437	.656	—
*1113	4	.484	.391	.625	1.031	.437	.656	*2135	1	2.625	.391	.687	3.406	.437	.656	—
*1114	4	.671	.391	.625	1.218	.437	.656	2139	1	1.343	.391	.687	2.125	.437	.656	—
*1116	4	.734	.391	.625	1.281	.437	.656	2140	7	1.343	.406	1.250	2.125	.437	.656	.750
*1125	2	3.906	.391	.687	4.687	.437	.656	*2142	1	1.265	.391	.687	2.047	.437	.656	—
*1132	4	.937	.391	.625	1.484	.437	.656	*2144	1	2.000	.391	.687	2.781	.625	1.000	—
*1134	2	2.000	.391	.687	2.781	.437	.656	*2145	3	.828	.391	.625	1.312	.437	.656	—
*1135	2	2.625	.391	.687	3.406	.437	.656	2162	1	8.687	.468	.687	9.625	.796	1.281	—
1139	2	1.343	.391	.687	2.125	.437	.656	2171	8	1.343	.406	2.000	2.125	.437	.656	.750
*1142	2	1.265	.391	.687	2.047	.437	.656	2173	1	1.343	.391	.687	2.125	.625	1.000	—
*1144	2	2.000	.391	.687	2.781	.625	1.000	2174	7	1.343	.356	1.750	2.062	.625	1.000	1.187
*1145	4	.828	.391	.625	1.312	.437	.656	2175	1	1.625	.468	.687	2.562	.796	1.281	—
1162	2	8.687	.468	.687	9.625	.796	1.281	2176	7	1.625	.468	2.125	2.562	.796	1.281	1.562
1173	2	1.343	.391	.687	2.125	.625	1.000	2182	9	1.343	.406	2.750	2.125	.437	.656	.750
1175	2	1.625	.468	.687	2.562	.796	1.281	2185	1	3.312	.391	.687	4.093	.625	1.000	—
1185	2	3.312	.391	.687	4.093	.625	1.032	2186	1	4.000	.468	.687	4.937	.796	1.281	—
1186	2	4.000	.468	.687	4.937	.796	1.281	2187	8	1.343	.356	2.937	2.062	.625	1.000	1.187
1189	2	3.312	.391	.687	4.093	.437	.656	2188	9	1.343	.356	4.125	2.062	.625	1.000	1.187
1191	2	5.218	.391	.687	6.000	.437	.656	2189	1	3.312	.391	.687	4.093	.437	.656	—
1194	2	7.205	.391	.687	7.985	.437	.656	2190	8	1.625	.468	3.687	2.562	.796	1.281	1.562
1195	2	5.156	.391	.687	5.937	.625	1.000	2191	1	5.250	.391	.687	6.030	.437	.656	—
1198	2	7.125	.391	.687	7.906	.625	1.000	2192	9	1.625	.468	5.250	2.562	.796	1.281	1.562
1199	2	6.343	.468	.687	7.281	.796	1.281	2194	1	7.230	.391	.687	8.010	.437	.656	—
*2101	3	.281	.391	.625	.812	.437	.656	2195	1	5.156	.391	.687	5.937	.625	1.000	—
*2104	5	—	.468	.625	.890	.750	1.281	2198	1	7.125	.391	.687	7.906	.625	1.000	—
*2109	1	1.156	.391	.687	1.937	.437	.656	2199	1	6.343	.468	.687	7.281	.796	1.281	—
*2110	1	1.562	.391	.687	2.343	.437	.656	*Special order only. Dimensions B, D, F, H should be used for reference								
*2113	3	.484	.391	.625	1.031	.437	.656									
*2114	3	.671	.391	.625	1.218	.437	.656									

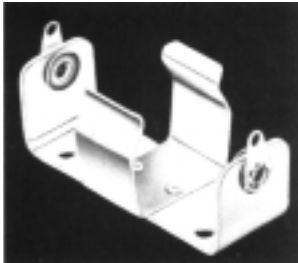


Designers' Choice

# ALUMINUM BATTERY HOLDERS

A standard line of battery holders available for immediate shipment from stock. Low cost, lightweight and sturdily constructed of quality materials. Good electrical contact, low leakage current and snap-fit clips are the outstanding features.

**MODIFICATIONS:** We welcome the opportunity to quote on variations of standard items. Use our engineering service for your special custom-built holders. Holders with PC and Quick-Fit terminals available on special order.



- Brass Eyelets, Nickel Plate
- Brass Lugs, Nickel Plate
- Moisture Proof, Resin Impregnated, Fibre Insulating Washers
- Aluminum 2024-T3, Frame & Clip

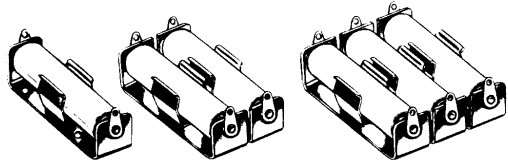


FIG. 1

FIG. 2

FIG. 3

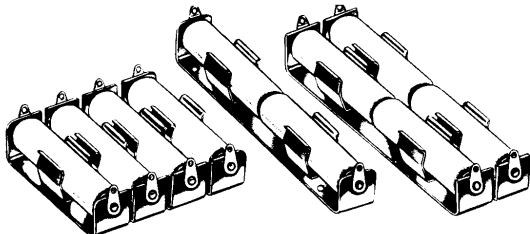


FIG. 4

FIG. 5

FIG. 7

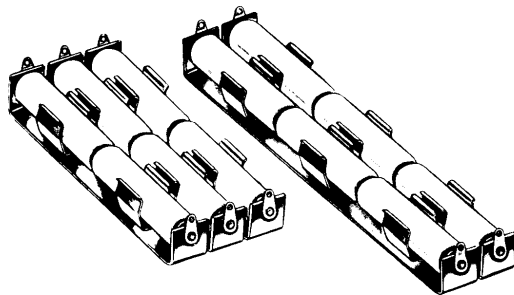


FIG. 8

FIG. 12

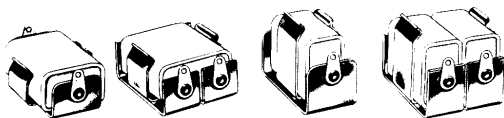


FIG. 9

FIG. 10

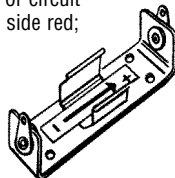
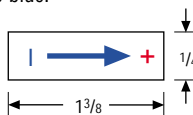
FIG. 11

FIG. 14

## POLARITY INDICATING LABEL

- No Gluing or Wetting Needed
- Economical
- Pressure Sensitive Adhesive Back
- Adheres To All Surfaces

Recommended where proper polarity of battery insertion or circuit polarity is to be shown. Labels are two color, (+) positive side red; arrow, (-) negative side blue.



CAT. NO. 58

Ideal for Alkaline, Carbon, Zinc, NiMH  
NiCd and Lithium Cells.

DIMENSIONAL DRAWINGS ON THE FOLLOWING PAGE

CAT. NO.	HOLDS NO. OF CELLS	FIG. NO.	BATTERY CROSS REFERENCE			
			EVEREADY	DURACELL	RAY-O-VAC	NEDA
<b>"AAA" CELL HOLDER</b>			(BATTERY SIZE $\frac{.375}{.468}$ O.D. $\times$ $\frac{1.673}{1.752}$ H)			
137	1	1				
138	2	2	E92, 912, CH12	M24F, MN2400	824	24A, 24F, 24P
169	3	3				
170	4	4				
<b>"AA" CELL HOLDERS</b>			(BATTERY SIZE $\frac{.531}{.565}$ O.D. $\times$ $\frac{1.906}{1.988}$ H)			
139	1	1				
140	2	2	E9, EV15, EN91, CH15, E91, E133, E133N, E177, 505, 523, 1015, 1215	ZM9, RM12R, NC15AA, M15F, M15AA, TR133R, TR177, M505, MN1500, PC 1500	5AA, 615, 815, 7AA	15, 15A, 15C, 15D, 15F, 15M, 15NC, 221, 1101M, 1113M, 1306AP, 1300M, 1314M, 1606M
171	3	3				
182	4	4				
189	2	5				
192	4	7				
193	6	8				
<b>"C" CELL HOLDERS</b>			(BATTERY SIZE $\frac{.875}{1.125}$ O.D. $\times$ $\frac{1.875}{1.969}$ H)			
173	1	1				
174	2	2*	CH35, E93, 935, 1235, EV35, EN93	M14F, M14HD, NC14C, TR286, MN1400, PC1400	1C, 614, 814	14A, 14C, 14D, 14F, 14NC, 1600M
187	3	3				
185	2	5				
196	4	7*				
197	6	8				
<b>"D" CELL HOLDERS</b>			(BATTERY SIZE $\frac{1.187}{1.375}$ O.D. $\times$ $\frac{2.312}{2.412}$ H)			
175	1	1				
176	2	2*	CH50, E95, 950, 1250, EV50, EN95	M13F, NC13D, S42, M13HD, TR289, MN1300, PC1300	2D, 6D, 613, 813	13A, 13C, 13D, 13F, 13NC, 1115M, 1810M
190	3	3				
186	2	5				
200	4	7*				
201	6	8				
205	6	12*				
<b>"N" CELL HOLDERS</b>			(BATTERY SIZE $\frac{.375}{.468}$ O.D. $\times$ $\frac{1.110}{1.189}$ H)			
154	1	1	E90, E340E, E401E, EP401E	MP401H	R401, RP401, 810	910A, 910F, 910M, 1117M, 1118M, MN9100
155	2	2				
156	3	3				
<b>"9 VOLT" BATTERY HOLDERS</b>						
139B	1	1	206	M1611	—	1611
173P	1	1	226	—	—	1600
203P	1	10	CH22, EN22, E146X, 216, 522, 1222, E303396	TR146X, M1604, M1604HD, MN1604, PC146X, PC1604	A1604, D1604, 1604	1604, 1604A, 1604C, 1604D, 1604M, 1604NC, 1619M
1290	REF. PAGE 21					
1291	REF. PAGE 21					
<b>"15 VOLT" BATTERY HOLDERS</b>						
163	1	9	—	—	—	224
161	1	9	—	—	—	224
166	1	11	411	—	—	208
167	2	14	—	—	—	208
225	1	1	504	—	—	220
226	2	2	—	—	—	220
<b>"22 1/2 VOLT" BATTERY HOLDERS</b>						
139	1	1	505	—	—	221
168	1	9	420	—	—	225
177	1	11	412	M215	—	215
178	2	14	—	—	—	215
<b>"30 VOLT" BATTERY HOLDERS</b>						
183	1	11	413	—	—	210
184	2	14	—	—	—	210

\*"C" Cell Holders-Dual Cat. No. 97 clips used

"D" Cell Holders-Dual Cat. No. 98 clips used

# ALUMINUM BATTERY HOLDERS

Designers' Choice



## MATERIAL SPECIFICATIONS

Insulating Washers: Moisture proof, resin impregnated fibre  
Terminal Lugs: Brass, Tin Plate

Frame and Clips: Aluminum 2024-T3  
Contact Eyelet: Brass, Nickel Plate

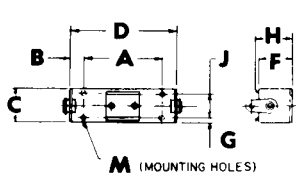


FIG. 1

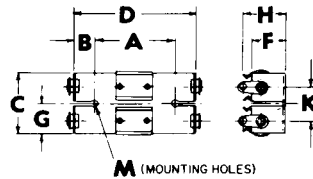


FIG. 2

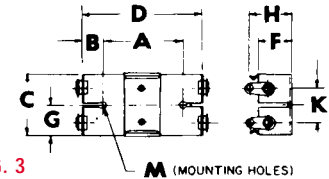


FIG. 3

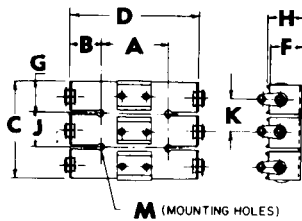


FIG. 4

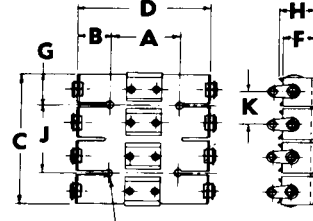


FIG. 5

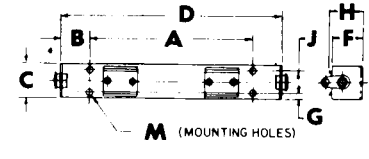


FIG. 6

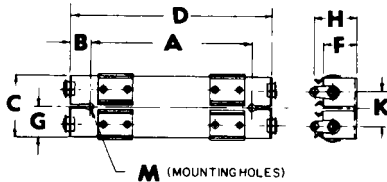


FIG. 7

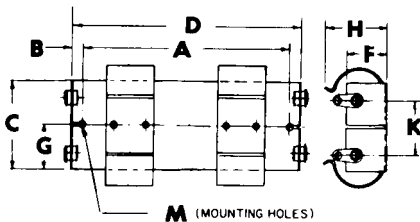


FIG. 8

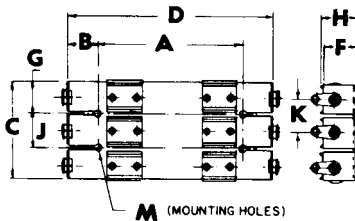


FIG. 9

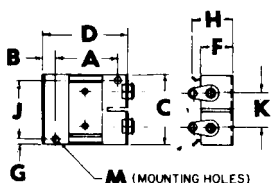


FIG. 10

CAT. NO.	FIG. NO.	±.010 A	±.015 B	±.010 C	±.015 D	±.010 F	±.010 G	±.015 H	±.005 J	±.010 K	MTG HOLES M ±.003
*109	1	1.500	.218	.625	1.937	.609	.109	.625	.406	—	4#30(.128 Dia)
*110	1	1.500	.437	.625	2.374	.625	.109	.625	.406	—	4#30(.128 Dia)
132	1	1.125	.171	.625	1.468	.640	.093	.625	.437	—	4#34(.111 Dia)
*134	1	1.812	.484	.625	2.781	.609	.093	.625	.437	—	4#34(.111 Dia)
*135	6	2.500	.464	.625	3.430	.610	.093	.625	.437	—	4#30(.128 Dia)
137	1	1.500	.218	.437	1.915	.468	.093	.484	.250	—	2#34(.111 Dia)
138	2	.875	.531	.812	1.915	.468	.406	.484	—	.437	2#28(.140 Dia)
139	1	1.500	.312	.625	2.140	.625	.109	.580	.406	—	4#34(.111 Dia)
140	2	1.218	.461	1.125	2.140	.625	.562	.625	—	.625	2#28(.140 Dia)
154	1	.906	.242	.437	1.343	.468	.093	.531	.250	—	2#34(.111 Dia)
155	2	.875	.245	.937	1.343	.468	.468	.531	—	.500	2#30(.128 Dia)
156	4	.875	.257	1.500	1.343	.475	.468	.531	.562	.531	4#34(.111 Dia)
*157	10	1.125	.218	1.250	1.562	.578	.109	.718	1.032	.593	2#34(.111 Dia)
*160	1	3.500	.406	1.000	4.312	.960	.141	1.218	.718	—	2#28(.140 Dia)
*163	1	1.125	.312	1.000	1.750	.687	.141	1.218	.718	—	2#28(.140 Dia)
*164	1	1.625	.402	1.000	2.430	.687	.125	1.218	.750	—	2#28(.140 Dia)
*165	1	2.187	.390	1.000	2.968	.687	.141	1.218	.718	—	2#28(.140 Dia)
166	1	1.000	.312	.750	1.625	.768	.093	1.156	.562	—	4#28(.140 Dia)
167	3	1.000	.312	1.125	1.593	.750	.562	1.264	—	.593	2#28(.140 Dia)
*168	1	1.500	.377	.750	2.275	.718	.125	.937	.500	—	4#28(.140 Dia)
170	5	.875	.531	1.687	1.915	.468	.406	.484	.875	.437	4#28(.140 Dia)
171	4	1.218	.461	1.750	2.140	.625	.562	.625	.625	.625	4#28(.140 Dia)
173	1	1.500	.296	.750	2.093	.781	.156	.953	.437	—	4#28(.140 Dia)
174	3	1.750	.172	1.625	2.093	.781	.812	1.105	—	1.000	2#28(.140 Dia)
175	1	1.750	.406	1.000	2.562	.937	.125	1.218	.750	—	4#30(.128 Dia)
176	3	2.093	.248	2.062	2.578	.937	1.030	1.437	—	1.312	2#28(.140 Dia)
177	1	1.500	.312	.750	2.125	.781	.156	1.156	.437	—	4#28(.140 Dia)
178	3	1.218	.453	1.125	2.215	.781	.562	1.218	—	.625	2#28(.140 Dia)
*179	1	.937	.250	1.000	1.425	.930	.125	1.218	.750	—	4#30(.128 Dia)
182	5	1.218	.461	2.656	2.140	.625	.609	.625	1.437	.718	4#28(.140 Dia)
183	1	1.750	.445	.750	2.687	.812	.093	1.156	.562	—	4#34(.111 Dia)
184	3	1.812	.414	1.125	2.640	.812	.562	1.218	—	.625	2#28(.140 Dia)
185	6	3.187	.419	.750	4.025	.812	.125	.953	.500	—	4#28(.140 Dia)
186	6	4.125	.370	1.000	4.865	.968	.156	1.218	.687	—	4#30(.128 Dia)
187	4	1.250	.435	2.840	2.093	.781	.812	.953	1.125	1.125	4#28(.140 Dia)
189	6	3.000	.538	.625	4.075	.625	.093	.625	.437	—	4#30(.128 Dia)
190	4	1.937	.321	3.375	2.578	.968	1.125	1.218	1.125	1.343	4#28(.140 Dia)
192	7	3.093	.542	1.125	4.093	.625	.593	.625	—	.625	2#28(.140 Dia)
193	9	3.125	.484	1.750	4.075	.625	.562	.625	.625	.625	4#28(.140 Dia)
196	8	3.187	.419	1.625	4.025	.781	.812	1.125	—	1.000	2#28(.140 Dia)
197	9	3.187	.419	2.875	4.025	.812	.937	.968	1.000	1.171	4#28(.140 Dia)
200	8	4.375	.245	2.062	4.865	.968	1.032	1.468	—	1.312	2#28(.140 Dia)
201	9	4.275	.245	3.375	4.865	.968	1.125	1.218	1.125	1.343	4#28(.140 Dia)
203P	10	1.375	.312	1.125	2.000	.547	.125	.793	.875	.500	4#30(.128 Dia)
205	8	6.812	.250	2.062	7.230	.937	1.030	1.437	—	1.312	4#28(.140 Dia)
*225	1	1.125	.226	.625	1.578	.609	.093	.625	.437	—	4#34(.111 Dia)
*226	2	.875	.351	1.125	1.578	.609	.562	.625	—	.625	2#28(.140 Dia)
1290	10	1.375	.218	1.185	1.890	.562	.125	.718	.875	.500	4#30(.128 Dia)
1291	10	1.375	.218	1.185	1.890	.562	.125	.718	.875	.500	4#30(.128 Dia)

\*Special order only

Dimensions are for reference only





Designers' Choice

# INTERCONNECT BATTERY HOLDERS

## ALUMINUM HOLDERS CONNECTED IN SERIES

### ELIMINATES WIRING • LABOR SAVING

Features pre-connected jumper strap insulated from the Aluminum base. Batteries held in series circuit without need of additional wiring.

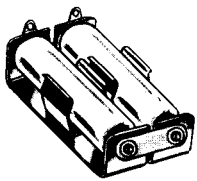


FIG. 2

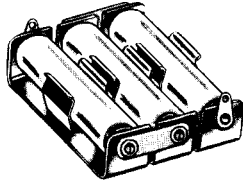


FIG. 3

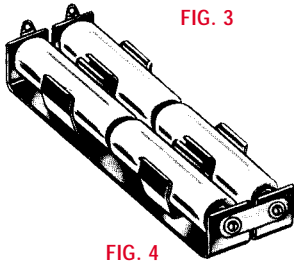


FIG. 4

CAT. NO.	HOLDS NO. OF CELLS	FIG. NO.	BATTERY CROSS REFERENCE			
			EVEREADY	DURACELL	RAY-O-VAC	NEDA
			All Batteries listed within boxes are in the same size group			
"AA" CELL HOLDERS			(BATTERY SIZE $\frac{.531}{.565}$ O.D. $\times$ $\frac{1.906}{1.988}$ H)			
146	2	2	E9, EV15, EN91, CH15, E133, E133N, E177, 505, 523, 1015, 1215	ZM9, RM12R, NC15AA, M15F, M15AA, TR133R, TR177, M505, MN1500, PC1500	5AA, 615, 815, 7AA	15, 15A, 15C, 15D, 15F, 15M, 15NC, 221, 1101M, 1113M, 1306AP, 1306M, 1314M, 1606M
147	3	3				
148	4	4				
"C" CELL HOLDERS			(BATTERY SIZE $\frac{.875}{1.125}$ O.D. $\times$ $\frac{1.875}{1.969}$ H)			
149	2	2	CH35, E93, 935, 1235, EV35, EN93	M14F, M14HD, NC14C, TR286, MN1400, PC1400	1C, 614, 814	14A, 14C, 14D, 14F, 14NC, 1600M
150	3	3				
151	4	4				
"D" CELL HOLDERS			(BATTERY SIZE $\frac{1.187}{1.375}$ O.D. $\times$ $\frac{2.312}{2.412}$ H)			
152	2	2	CH50, E95, 950, 1250, EV50, EN95	M13F, NC13D, S42, M13HD, TR289, MN1300, PC1300	2D, 6D, 613, 813	13A, 13C, 13D, 13F, 13NC, 1115M, 1810M
153	3	3				
158	4	4				

## ALUMINUM HOLDERS WITH PC LUGS

### ELIMINATES WIRING • LABOR SAVING

For printed circuitry we have standardized our most popular holders with PC Lugs. Choice of single or multiple holders "AA" and "C" assembled with Cat. No. 4002 lug. "D" assembled with Cat. No. 4003 lug.

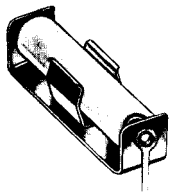


FIG. 1

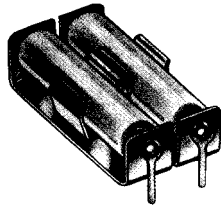


FIG. 2

CAT. NO.	HOLDS NO. OF CELLS	FIG. NO.	BATTERY CROSS REFERENCE			
			EVEREADY	DURACELL	RAY-O-VAC	NEDA
			All Batteries listed within boxes are in the same size group			
"AA" CELL HOLDERS			(BATTERY SIZE $\frac{.531}{.565}$ O.D. $\times$ $\frac{1.906}{1.988}$ H)			
2222	1	1	E9, EV15, EN91, CH15, E133, E133N, E177, 505, 523, 1015, 1215	ZM9, RM12R, NC15AA, M15F, M15AA, TR133R, TR177, M505, MN1500, PC1500	5AA, 615, 815, 7AA	15, 15A, 15C, 15D, 15F, 15M, 15NC, 221, 1101M, 1113M, 1306AP, 1306M, 1314M, 1606M
2223	2	2				
"C" CELL HOLDERS			(BATTERY SIZE $\frac{.875}{1.125}$ O.D. $\times$ $\frac{1.875}{1.969}$ H)			
2224	1	1	CH35, E93, 935, 1235, EV35, EN93	M14F, M14HD, NC14C, TR286, MN1400, PC1400	1C, 614, 814	14A, 14C, 14D, 14F, 14NC, 1600M
2225	2	2				
"D" CELL HOLDERS			(BATTERY SIZE $\frac{1.187}{1.375}$ O.D. $\times$ $\frac{2.312}{2.412}$ H)			
2226	1	1	CH50, E95, 950, 1250, EV50, EN95	M13F, NC13D, S42, M13HD, TR289, MN1300, PC1300	2D, 6D, 613, 813	13A, 13C, 13D, 13F, 13NC, 1115M, 1810M
2227	2	2				

## STEEL HOLDERS WITH PC LUGS

### ELIMINATES WIRING • LABOR SAVING

For printed circuitry we have standardized our most popular holders with PC Lugs. Choice of single or multiple holders "AA" and "C" assembled with Cat. No. 4002 lug. "D" assembled with Cat. No. 4003 lug.

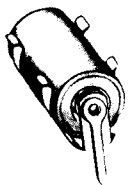


FIG. 3

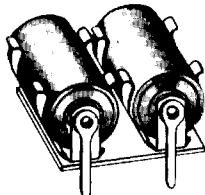


FIG. 4

CAT. NO.	HOLDS NO. OF CELLS	FIG. NO.	BATTERY CROSS REFERENCE			
			EVEREADY	DURACELL	RAY-O-VAC	NEDA
			All Batteries listed within boxes are in the same size group			
"AA" CELL HOLDERS			(BATTERY SIZE $\frac{.531}{.565}$ O.D. $\times$ $\frac{1.906}{1.988}$ H)			
2228	1	3	E9, EV15, EN91, CH15, E133, E133N, E177, 505, 523, 1015, 1215	ZM9, RM12R, NC15AA, M15F, M15AA, TR133R, TR177, M505, MN1500, PC1500	5AA, 615, 815, 7AA	15, 15A, 15C, 15D, 15F, 15M, 15NC, 221, 1101M, 1113M, 1306AP, 1306M, 1314M, 1606M
2229	2	4				
"C" CELL HOLDERS			(BATTERY SIZE $\frac{.875}{1.125}$ O.D. $\times$ $\frac{1.875}{1.969}$ H)			
2230	1	3	CH35, E93, 935, 1235, EV35, EN93	M14F, M14HD, NC14C, TR286, MN1400, PC1400	1C, 614, 814	14A, 14C, 14D, 14F, 14NC, 1600M
2231	2	4				
"D" CELL HOLDERS			(BATTERY SIZE $\frac{1.187}{1.375}$ O.D. $\times$ $\frac{2.312}{2.412}$ H)			
2232	1	3	CH50, E95, 950, 1250, EV50, EN95	M13F, NC13D, S42, M13HD, TR289, MN1300, PC1300	2D, 6D, 613, 813	13A, 13C, 13D, 13F, 13NC, 1115M, 1810M
2233	2	4				

# LITHIUM BATTERY HOLDERS

Designers' Choice

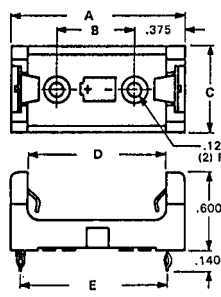


## PLASTIC PC BATTERY HOLDERS FOR "1/2 AA" • "AA" • "2/3 A" SIZES



FOR 108C, 1028C or 1029LC RETAINER COVER

1029C RETAINER COVER



### SPECIFICATIONS

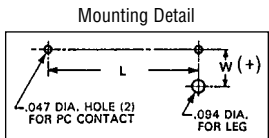
- Base: Glass Filled Nylon, UL Rated 94V-0
- Retainer Cover: PBT, UL Rated 94V-0
- Contacts: .012 Spring Steel
- Plating: Bright Tin over Nickel over Copper

### FEATURES

- Snap-In PC contact holds in position for wave solderability
- Tin over Nickel Plated contacts for excellent soldering
- Polarity clearly marked for orientation
- Low Profile, space-saving
- Snap-on retainer cover (optional) retains battery securely to withstand shock and vibration. Helps protect against shorting. Tamper-proof.

### APPLICATIONS

- Computer memory, power transfer and back-up systems
- Video and telecommunications power back-up requirements
- Preprogrammed video and electronic games
- Microprocessor, microcomputers, minicomputers, notebook, laptop and handheld computer memory hold applications
- Emergency power systems
- Residential, industrial and commercial security and fire alarm systems



HOLDER CAT. NO.	COVER CAT. NO.	SIZE & TYPE	DIMENSIONS					MTG. HOLES		BATTERY CROSS REFERENCE
			A (MAX)	B	C	D	E	L	W	
108	108C	1/2 AA	1.360	.610	.640	1.030	1.160	1.160	.279	Eveready 544, Duracell PX28L, Kodak K28A & KS28, Panasonic CR14250, Saft LCP3, Electrochem 3B955, Maxell 4LR44, Sanyo CR14250SE.
1028	1028C	AA	2.360	1.610	.640	2.030	2.160	2.160	.279	Eveready E9, EV15, E91, E177, 505, 1015, Duracell ZM9, NC15, M15F, TR177, M505, MN1500, PC1500, Panasonic UM-3 & P-45AA, Sanyo N-600AA & N-700AA, Rayovac 5AA, 7AA, 615, 815.
1029	1029C 1029LC	2/3 A	1.700	.950	.720	1.375	1.500	1.500	.320	Duracell DL2/3A, Electrochem 3B793 & 3B950, Panasonic CR123A, Saft 450SC & VR0450, Sanyo CR17335SE, Kodak K123L.

## 6 VOLT LITHIUM BATTERY HOLDERS

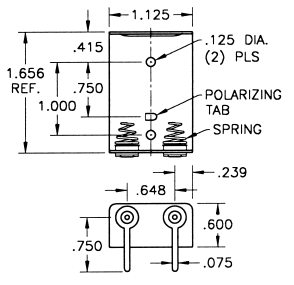
FOR DURACELL DL223A OR EQUIVALENT BATTERIES



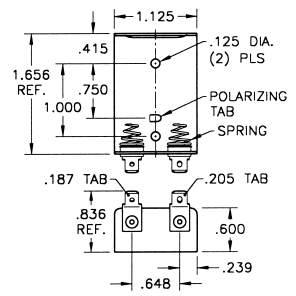
- Quick Fit/Solder Lug Terminals
- PC Board Terminals
- Lightweight, ideal for rugged applications

### SPECIFICATIONS

Frame: Aluminum 2024-T3  
Spring Contacts: .025 Dia. Spring Steel, Nickel Plate  
Terminals: Brass, Tin Plate



CAT. NO. 224  
PC Terminals



CAT. NO. 223  
Quick-Fit/Solder Lug

## LITHIUM BATTERY HOLDERS

PC PLASTIC HOLDER



FIG. 1

STANDARD LUGS

PC LUGS



FIG. 2 - ALL STEEL HOLDER



FIG. 3 - ALL STEEL HOLDER



FIG. 4 - ALUMINUM HOLDER



FIG. 5 - ALUMINUM HOLDER

CAT. NO	FIG. NO.	CAT. NO.	FIG. NO.	BATTERY SIZE	BATTERY DIA.	DURA-CELL	PANA-SONIC	SANYO G.E.
—	—	108	1	1/2AA	.51 × .99	P×28L	CR14250	CR14250SE
1103	2	2103	3	1/2AA	.51 × .99	P×28L	CR14250	CR14250SE
1105	2	2105	3	1/2A	.611 × .886	—	BR-1/2A	—
—	—	1029	1	2/3A	.661 × 1.315	DL-2/3A	BR-2/3A	CR17335SE
132	4	131	5	2/3A	.661 × 1.315	DL-2/3A	BR-2/3A	CR17335SE



Designers' Choice

# PLASTIC BATTERY HOLDERS

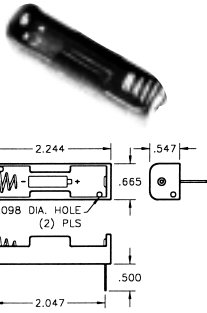
## PLASTIC BATTERY HOLDERS FOR "AA" • "AAA" SIZES

- Economical design, available with PC terminals or wire leads
- Batteries securely held in place to assure a positive connection and maintain a low contact resistance
- Contact springs self-adjust to variations in battery length
- Withstands shock and vibration
- Available with solder lugs or male/female snap fasteners

### SPECIFICATIONS

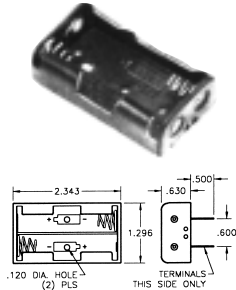
- Holder: Polypropylene
- Springs: Spring Steel, Nickel Plate
- PC Pins: .031 Brass, Nickel Plate
- Wires (Red & Black): #26AWG, Tinned, .187 end strip UL/CSA1007

Holds One (1) "AA" Cell



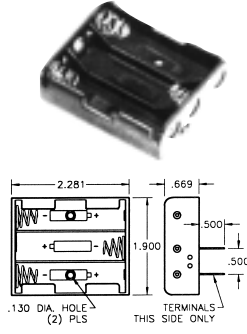
CAT. NO. 2460 – PC Mount  
CAT. NO. 2461 – 6" Wire Leads

Holds Two (2) "AA" Cells in Series



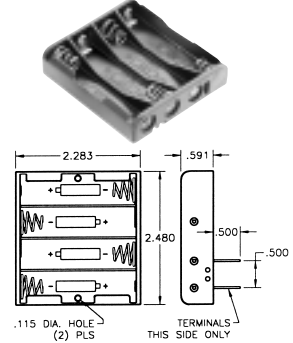
CAT. NO. 2462 – PC Mount  
CAT. NO. 2463 – 6" Wire Leads

Holds Three (3) "AA" Cells in Series



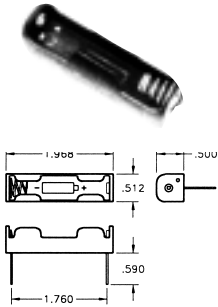
CAT. NO. 2464 – PC Mount  
CAT. NO. 2465 – 6" Wire Leads

Holds Four (4) "AA" Cells in Series



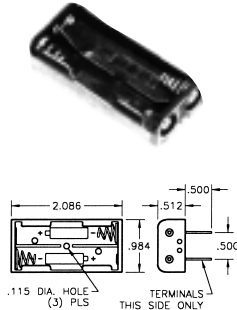
CAT. NO. 2477 – PC Mount  
CAT. NO. 2478 – 6" Wire Leads

Holds One (1) "AAA" Cells



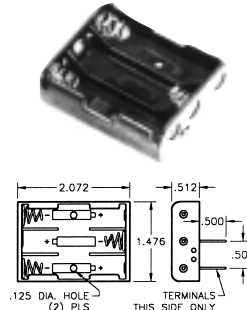
CAT. NO. 2466 – PC Mount  
CAT. NO. 2467 – 6" Wire Leads

Holds Two (2) "AAA" Cells in Series



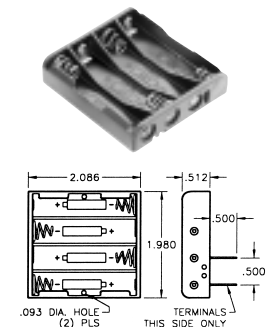
CAT. NO. 2468 – PC Mount  
CAT. NO. 2469 – 6" Wire Leads

Holds Three (3) "AAA" Cells in Series



CAT. NO. 2479 – PC Mount  
CAT. NO. 2480 – 6" Wire Leads

Holds Four (4) "AAA" Cells in Series



CAT. NO. 2481 – PC Mount  
CAT. NO. 2482 – 6" Wire Leads

## "AA" SIZE BATTERY HOLDERS WITH SNAP-ON CONNECTOR

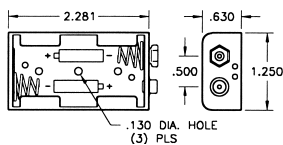
- Features separable "snap-on/snap-off" battery connector (9 Volt type) to assure reliable connections to battery powered equipment, controls and systems
- Economical design, holders available for two, three or four cells. Wired in series to accept connector (9 Volt type)
- Batteries securely held in place to maintain a positive contact and a low contact resistance

- Battery contact springs self adjust to variations in battery length
- Withstands shock and vibration
- Ideally mates with Keystone 9 Volt battery straps and connectors

### SPECIFICATIONS

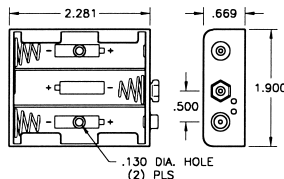
Holder: Polypropylene; Male/Female Contacts: Brass, Nickel Plate  
Battery Springs: Spring Steel, Nickel Plate

Holds Two (2) "AA" Cells in Series



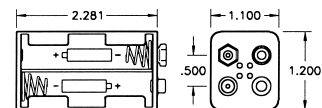
CAT. NO. 2474

Holds Three (3) "AA" Cells in Series



CAT. NO. 2475

Holds Four (4) "AA" Cells in Series



CAT. NO. 2476

# 9 VOLT HOLDERS & CONNECTORS

Designers' Choice



## HORIZONTAL 9 VOLT PC SNAP-ONS

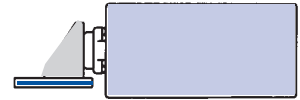
### MOUNTS DIRECTLY TO PRINTED CIRCUIT BOARD

PC Male/Female for any standard 9 Volt Battery. Cut costs by eliminating wiring. Compact Space Saver.

- Space saving design installs directly onto the PC board
- Contacts available for .062 and .093 thick PC boards
- Ideal for self-contained battery compartments



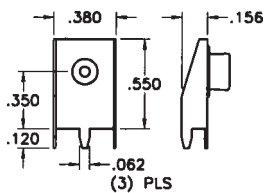
To Mount Battery "On" PC Board  
Use Cat. No. 593 and Cat. No. 594



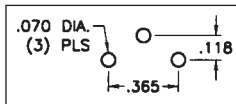
To Mount Battery "Off" PC Board  
Use Cat. No. 635 and Cat. No. 636

**MATERIAL:** Frame: .015 Steel, Tin Plate; Contacts: Steel, Nickel Plate

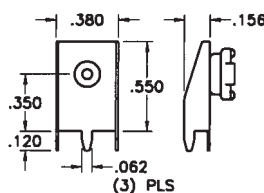
### "On-Board"



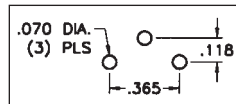
Mounting Detail



CAT. NO. 593 - Male

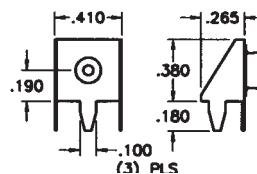


Mounting Detail

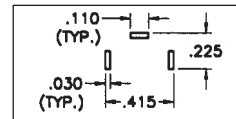


CAT. NO. 594 - Female

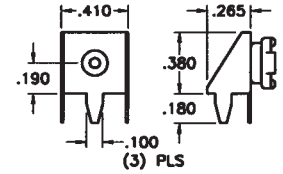
### "Off-Board"



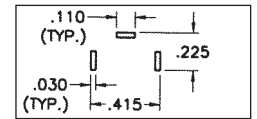
Mounting Detail



CAT. NO. 635 - Male



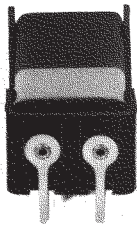
Mounting Detail



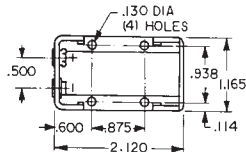
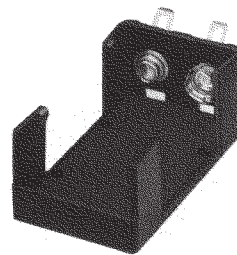
CAT. NO. 636 - Female

## UNIVERSAL 9 VOLT BATTERY HOLDERS

With PC Terminals or Combination Quick-Fit/Solder Lug Terminals.



CAT. NO. 1294  
PC Terminals



CAT. NO. 1295  
Quick-Fit/Solder Lug Terminals

Holds any size, any shape, standard 9 Volt battery.

Eliminates need to specify an exact battery brand, size or shape. Ideal for power source or memory back-up use in minicomputers, telecommunications, data processing, security systems, clocks, radios, toys and appliances.

- Male-female snap-in terminals assure positive contact and proper polarity
- Durable, rugged construction
- Excellent spring retention—holds battery in place
- Withstands severe shock and vibration
- Operating temperature range: -40°F to +266°F (-40°C to +130°C)
- Impervious to most industrial solvents

### SPECIFICATIONS

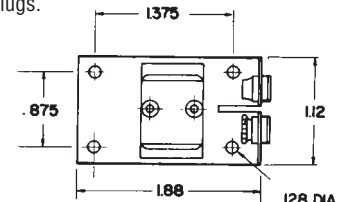
**Body:** Molded from high impact, Glass Filled Nylon  
**Terminals:** Brass, Tin Plate  
**Contacts:** Steel, Nickel Plate

## 9 VOLT SNAP-IN BATTERY HOLDERS

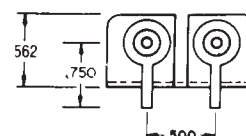
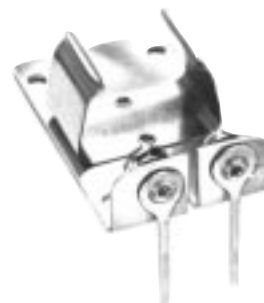
For use with standard 9 Volt battery. Battery snaps in place to insure positive contact. Ideal where severe shock and vibration are encountered. Available with standard solder lugs or printed circuit lugs.

### SPECIFICATIONS

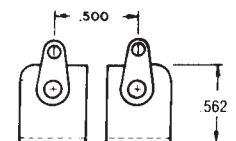
**Frame:** Aluminum  
**Solder Lugs:** Brass, Tin Plate  
**PC Lugs:** Brass, Tin Plate  
**Contacts & Clips:** Steel, Nickel Plate  
**Insulation:** Resin Impregnated Fibre



NOTE: For battery thicknesses over .640; specify Cat. No. 1290-79 or 1291-79.



CAT. NO. 1291 PC Lugs



CAT. NO. 1290 Solder Lugs



Designers' Choice

# 9 VOLT STRAPS & CONNECTORS

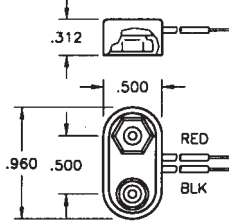
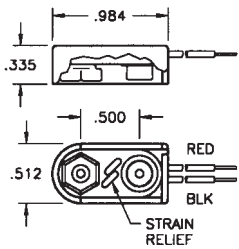
## SHIELDED 9 VOLT BATTERY STRAPS

- Insulates and shields 9 Volt battery snap-on connector contacts
- Assures safe secure use, reduces the potential of short circuits and prevents tampering with battery contacts
- Protects circuits, prevents unwanted electrical discharge due to unintended grounding
- Protects battery contacts from dust, dirt, and physical damage
- Ideal for rugged applications, made of high impact molded plastic with integral wire lead strain relief



### SPECIFICATIONS

Base: Polypropylene  
 Male/Female Contacts: Brass, Nickel Plate  
 Wires (Red & Black): #26AWG, Tinned, .187 end strip, UL/CSA1007



CAT. NO.	*LEAD LENGTH
84-4	4.00
84-6	6.00
84-8	8.00

I-STYLE

CAT. NO.	*LEAD LENGTH
81-4	4.00
81-6	6.00
81-8	8.00

T-STYLE  
with Strain Relief

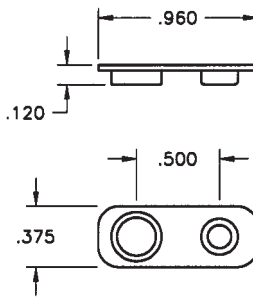
\*Tolerance on lead length +/- .250

\*Tolerance on lead length +/- .250

## PROTECTIVE BATTERY CAP

- Protects 9 Volt batteries and battery packs when they are not in use
- Snap-fits onto battery contacts
- Both male and female contacts are covered, minimizing physical damage which can occur during battery handling, shipping and storage
- Shields the battery contacts and reduces the potential of a short circuit between battery poles
- Protects sensitive electronic equipment, systems and circuits, cap prevents unwanted electrical discharges
- Protects the battery contacts from damage due to dust, dirt and contamination

MATERIAL: Impact Resistant Polypropylene, Black



CAT. NO. 96

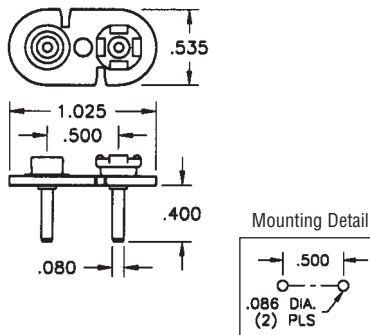
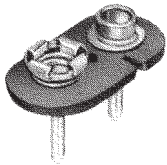
## BATTERY SNAP-ONS (Miniature and Standard)

For most electronic applications requiring a quick connect and disconnect of circuit. Commonly used with 9 Volt or other batteries designed with snap fasteners. Ideal for temporary or permanent means of connecting without soldering. Can be cascaded together for multiple connections.

DIMENSIONS FOR REFERENCE ONLY

## VERTICAL 9 VOLT PC SNAP-ONS

- Space saving, economical
- Excellent mechanical strength
- Low contact resistance
- Durable fibre base
- Wave solderable
- Anti-Wicking Design

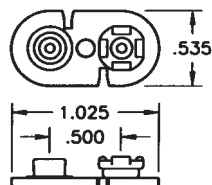


### SPECIFICATIONS

Base: .062 Fibre  
 Contacts: Steel, Nickel Plate  
 Pins: Brass, Tin Plate

CAT. NO. 968 - With PC Pins

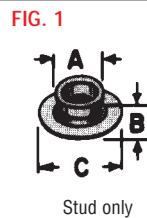
- Cost saving design
- Ideal for custom applications
- Attach your own terminals and wire leads



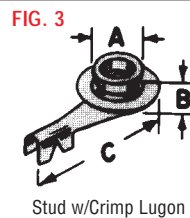
### SPECIFICATIONS

Base: .062 Fibre  
 Contacts: Steel, Nickel Plate

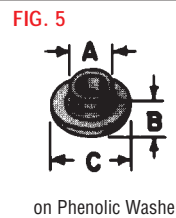
CAT. NO. 68 - Without PC Pins



Stud only



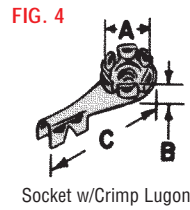
Stud w/Crimp Lugon



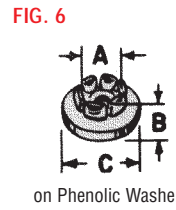
on Phenolic Washer



Socket only



Socket w/Crimp Lugon



on Phenolic Washer

CAT. NO.	FIG. NO.	A	B	C	DESCRIPTION
261	1	.225	.135	.312	Jr. Stud only-.093 hole
262	1	.283	.143	.425	Sr. Stud only-.125 hole
269	2	.205	.156	—	Jr. Socket only-.093 hole
270	2	.265	.156	—	Sr. Socket only-.125 hole
263	3	.225	.170	.790	Jr. Stud w/ Lug
264	3	.283	.185	.840	Sr. Stud w/ Lug
271	4	.205	.200	.790	Jr. Socket w/ Lug
272	4	.265	.185	.835	Sr. Socket w/ Lug
265	5	.225	.205	.500	Jr. Stud on Phenolic Washer
266	6	.205	.205	.500	Jr. Socket on Phenolic Washer
273	5	.283	.200	.500	Sr. Stud on Phenolic Washer
274	6	.265	.225	.500	Sr. Socket on Phenolic

# 9 VOLT BATTERY STRAPS

Designers' Choice



## PREMIUM 9 VOLT BATTERY STRAPS

Rigidly constructed. Nickel plate, male and female contacts. Female contacts are spring temper. Accepts numerous insertions to meet U.L. approved standards. Provides excellent mechanical strength and low contact resistance. Wire leads (red and black) are soldered for increased reliability. Wires have tinned copper conductors, PVC insulation and the ends are stripped for easy connection.

Wires are rated to 176°F (80° C) and 300V and meet UL/CSA #1061/#1007 requirements.

Modifications available with different lead lengths.

\*Tolerance on lead length +/- .250



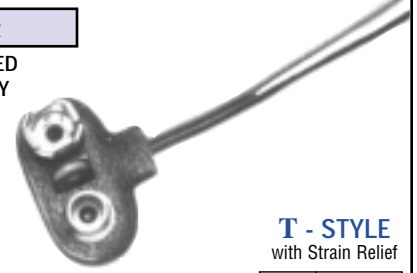
### VINYL COVER

- FULLY INSULATED
- RIGID ASSEMBLY

### I - STYLE

CAT. NO.	*LEAD LENGTH
2238	4.00
2239	6.00
2240	8.00

Cover Sizes: 1.125 x .530  
Contacts: Phos. Br., Nickel Plate  
Wire: #26 AWG, 7/34  
End Strip: .250 Long, Tinned



### T - STYLE with Strain Relief

CAT. NO.	*LEAD LENGTH
2241	4.00
2242	6.00
2243	8.00

Cover Sizes: 1.000 x .687  
Contacts: Phos. Br., Nickel Plate  
Wire: #26 AWG, 7/34  
End Strip: .250 Long, Tinned

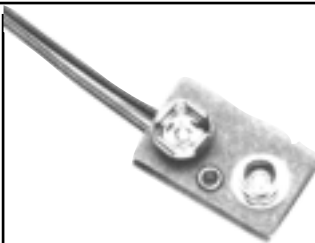


### FIBRE BASE

- .062 THICK

CAT. NO.	*LEAD LENGTH
68	None
72-4	4.00
72	7.00
72-8	8.00

Cover Sizes: 1.030 x .535  
Contacts: Steel, Nickel Plate  
Wire: #22 AWG, 7/30 Prebond  
End Strip: .375 Long, Tinned



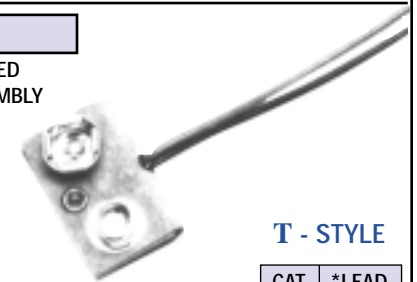
### FIBRE COVER

- FULLY INSULATED
- FLEXIBLE ASSEMBLY

### I - STYLE

CAT. NO.	*LEAD LENGTH
83-4	4.00
83	6.50
83-8	8.00

Cover Sizes: .900 x .575  
Contacts: Steel, Nickel Plate  
Wire: #22 AWG, 7/30 Prebond  
End Strip: .375 Long, Tinned



### T - STYLE

CAT. NO.	*LEAD LENGTH
85-4	4.00
85-6	6.50
85-8	8.00

Cover Sizes: .900 x .575  
Contacts: Steel, Nickel Plate  
Wire: #22 AWG, 7/30 Prebond  
End Strip: .375 Long, Tinned

## ECONOMY 9 VOLT BATTERY STRAPS

When product cost is of the utmost importance these economy battery straps will suit your needs. Brass contacts, nickel plated with vinyl covering. Wires have tinned copper conductors, PVC insulation and the ends are stripped for easy connection. Wires meet UL/CSA #1007 requirements.

Modifications available with different lead lengths.

\*Tolerance on lead length +/- .250



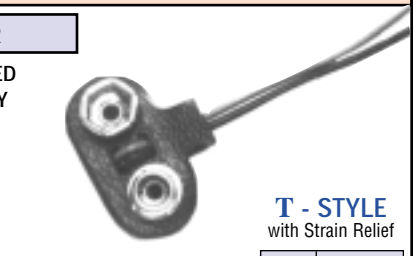
### VINYL COVER

- FULLY INSULATED
- RIGID ASSEMBLY

### I - STYLE

CAT. NO.	*LEAD LENGTH
232	4.00
233	6.00
234	8.00

Cover Sizes: 1.125 x .530  
Contacts: Brass, Nickel Plate  
Wire: #26 AWG, 7/34  
End Strip: .250 Long, Tinned



### T - STYLE with Strain Relief

CAT. NO.	*LEAD LENGTH
235	4.00
236	6.00
237	8.00

Cover Sizes: 1.000 x .687  
Contacts: Brass, Nickel Plate  
Wire: #26 AWG, 7/34  
End Strip: .250 Long, Tinned

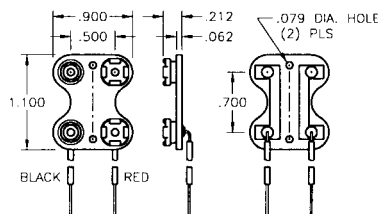
## DUAL 9 VOLT BATTERY STRAPS

These dual battery straps are pre-wired for connecting two 9 Volt batteries. Available for either series or parallel connection. Base made from fibre material with steel, nickel plated contacts. Wires have tinned copper conductors, PVC insulation and the ends are stripped for easy connection. Wires meet UL/CSA #1061 requirements.



\*Tolerance on lead length +/- .250

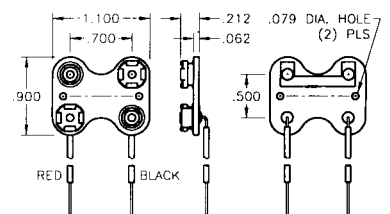
### PARALLEL



Contacts: Steel, Nickel Plate  
Wire: #22 AWG, 7/30 Prebond  
End Strip: .375 Long, Tinned

CAT. NO.	*LEAD LENGTH
227	7.00

### SERIES



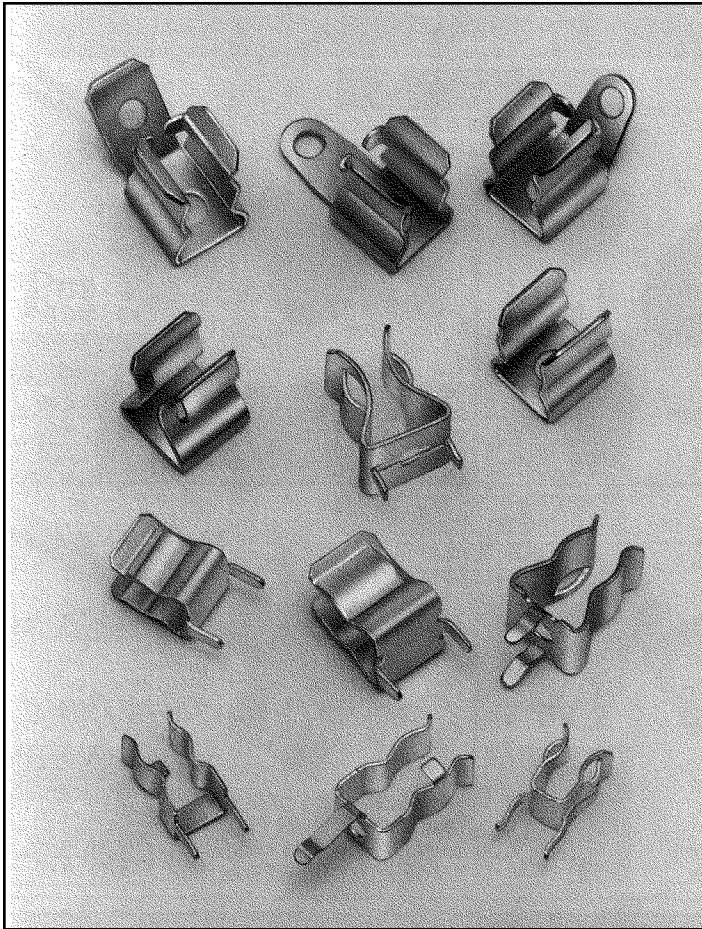
Contacts: Steel, Nickel Plate  
Wire: #22 AWG, 7/30 Prebond  
End Strip: .375 Long, Tinned

CAT. NO.	*LEAD LENGTH
229	7.00



Designers' Choice

# 2AG & 5mm FUSE CLIPS



- PC thru mount and rivet types for 2AG, 5mm, 3AG, 9/32 & 13/32 fuse sizes
- Low contact resistance
- Withstands shock and vibration
- Rated 6.3 to 30 Amps
- Custom designs and modifications available to your specifications

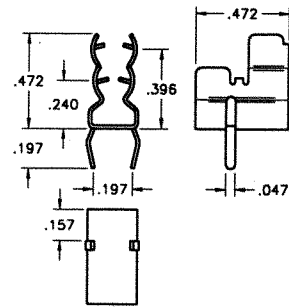
### PC THRU MOUNT TYPES

- Available for 2AG, 5mm, 3AG & 13/32 sizes
- Low profile, space saving
- Snap-fit design enhances assembly and PC retention for wave soldering
- Available with orientation legs to assure proper PC installation
- Available with or without end stops

### RIVET TYPES

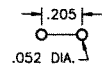
- Available for 3AG & 9/32 sizes
- Available with straight or 45° solder lugs
- Available with .187, .205 or .250 or quick fit tabs
- Low profile, space saving
- Available with or without end stops

## 5mm/3AG PC MULTI-FUSE CLIP



.016 Phosphor Bronze, Tin Plate  
Current Rating: 15 Amps

Mounting Detail

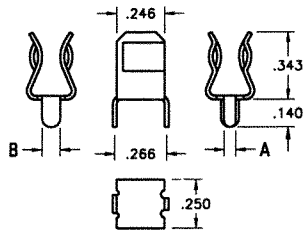


CAT. NO. 3562

## 5mm PC CLIP



3517 3518P

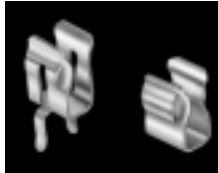


.020 Brass, Tin Plate  
Current Rating: 15 Amps

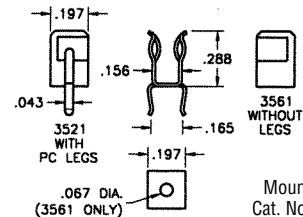
CAT. NO.	"A"	"B"
3517	.060	.060
3518P	.060	.093

With or Without Orientation Legs

## 2AG/5mm THM/SMT FUSE CLIP



3521 3561

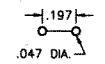


.016 Brass, Tin Plate  
Current Rating: 10 Amps

CAT. NO. 3521 (THM with PC legs)

CAT. NO. 3561 (SMT with Hole)

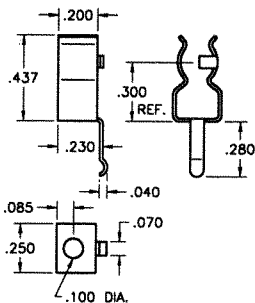
Mounting Detail  
Cat. No. 3521 Only



## 5mm PC CLIP

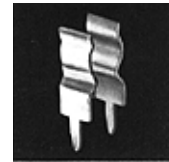


.016 Brass, Tin Plate  
Current Rating: 6.3 Amps

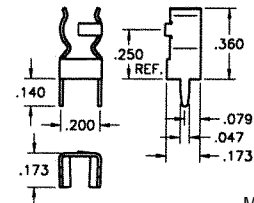


CAT. NO. 3520

## 5mm PC CLIP

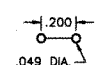


.016 Brass, Tin Plate  
Current Rating: 10 Amps



CAT. NO. 3519

Mounting Detail



# 3AG (.250") FUSE CLIPS

Designers' Choice

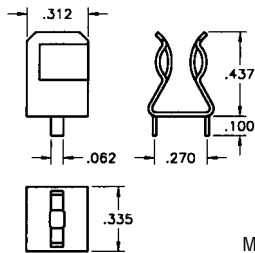


- Snap-In and Press-In design for wave soldering
- Low profile, space saving
- Available with orientation legs
- Available with and without end stops
- Low contact resistance
- Rated 15 Amps
- Economical and easy to assemble

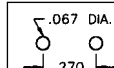
## 3AG PC CLIP



.020 Brass, Tin Plate.  
For 1/4" dia. fuses



Mounting Detail



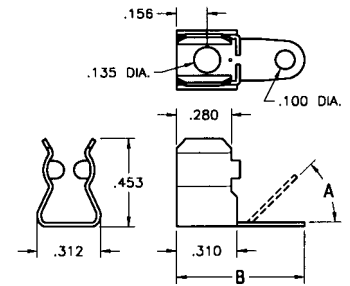
CAT. NO. 3530

## 3AG CLIP WITH SOLDER LUG



3533 3535

.020 Brass, Nickel Plate.  
For 1/4" dia. fuses

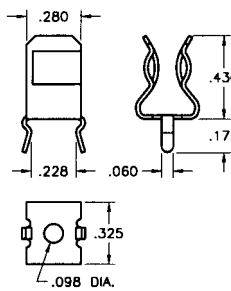


CAT. NO.	A	B
3533	Flat	.656
3535	45°	.562

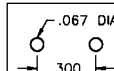
## 3AG SNAP-IN PC CLIP



.020 Brass, Tin Plate.  
For 1/4" dia. fuses.



Mounting Detail

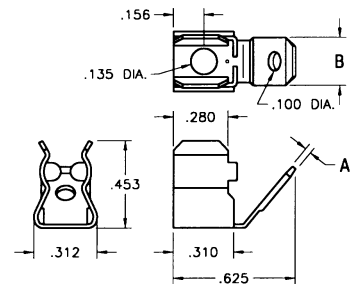


CAT. NO. 3513

## 3AG CLIPS WITH QUICK-FIT TAB



.020 Brass, Nickel Plate  
For 1/4" dia. fuses

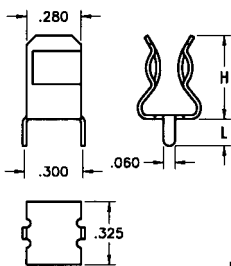


CAT. NO.	A	B
4244	.032	.250
4246	.020	.187
4247	.020	.205

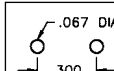
## 3AG PC CLIPS



.020 Brass, Tin Plate. For 1/4" dia. fuses.



Mounting Detail

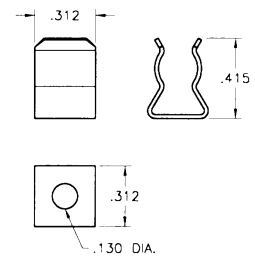


CAT. NO.	H	L	END STOPS
3510	.421	.140	NO
3529	.421	.140	YES
3511	.430	.250	NO
3514	.450	.250	YES

## 3AG FUSE CLIP



.020 Brass, Nickel Plate  
For 1/4" dia. fuses



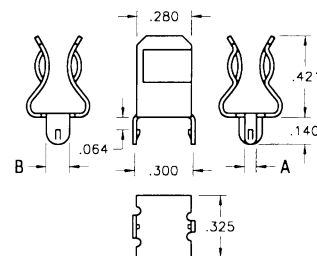
CAT. NO. 3531 – Without End Stops

## 3AG SNAP-IN PC CLIP



3515 3515P, 3516P

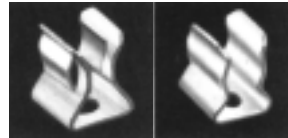
.020 Brass, Tin Plate. For 1/4" dia. fuses.



With or Without Orientation Legs

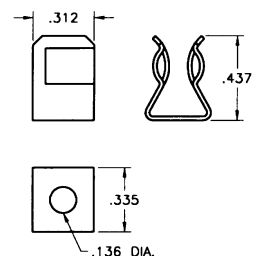
CAT. NO.	A	B
3515	.060	.060
3515P	.060	.093
3516P	.060	.120

## 3AG FUSE CLIP



3532 3567

.020 Brass, Nickel Plate  
For 1/4" dia. fuses



CAT. NO.	END STOPS
3532	YES
3567	NO





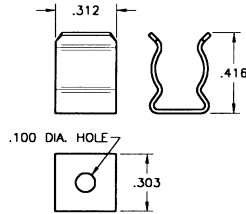
Designers' Choice

# FUSE CLIPS & HOLDERS

## 9/32 FUSE CLIP



.020 Brass, Nickel Plate  
Current Rating: 15 Amps

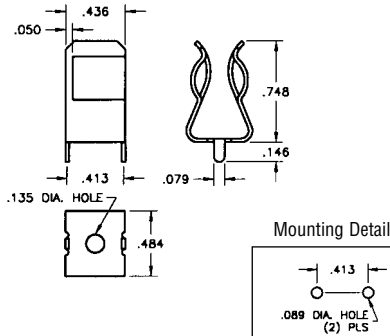


CAT. NO. 3565

## 13/32 PC FUSE CLIP



.028 Brass, Tin Plate  
Current Rating: 30 Amps



CAT. NO. 3566

# CUSTOM FUSE CLIPS & HOLDERS

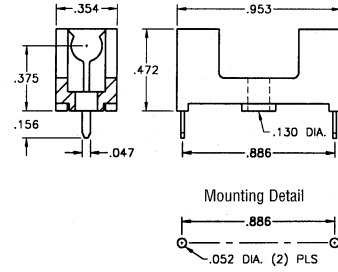
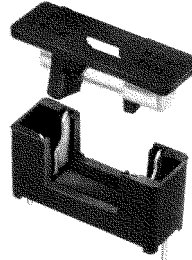
Keystone is fully integrated to meet your total design & production needs.

Manufacturing custom designs & modifications of standard items is our specialty.

Quotations on special fuse clips & holders furnished promptly upon receipt of sample, sketch, print or CAD drawings.

## PC 5mm FUSE HOLDERS

### SLIM LINE & (OPTIONAL) COVER



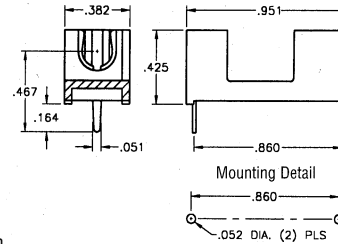
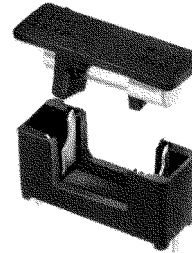
- Optional cover with window protects and insulates fuse

CAT. NO. 4628 – Holder  
CAT. NO. 4628C – Cover only (with window)

### SPECIFICATIONS

Base & Cover: Nylon, UL94V-0  
Contacts: Brass, Tin Plate  
Rated: 5 Amp @ 250V

### LOW PROFILE & (OPTIONAL) COVER



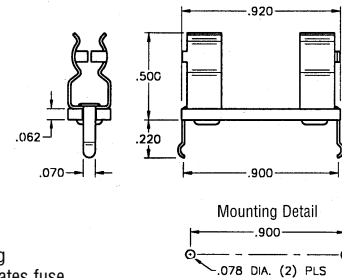
- Low profile, space saving design
- Optional cover protects and insulates fuse

CAT. NO. 4527 – Holder  
CAT. NO. 4527C – Cover only

### SPECIFICATIONS

Base & Cover: Nylon, UL94V-0  
Contacts: Brass, Tin Plate  
Rated: 5 Amp @ 250V

### PC SNAP-IN FUSE HOLDER



- Low profile, space saving design
- Snap-in design for wave soldering
- Optional cover protects and insulates fuse

CAT. NO. 3527 – Holder  
CAT. NO. 3527C – Vinyl cover only

### SPECIFICATIONS

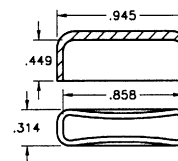
Base: .062 G-10, UL Rated 94V-0  
Clips: Brass, Tin Plate  
Rated: 6.3 Amps @ 250V

## 5mm & 3AG FUSE COVERS



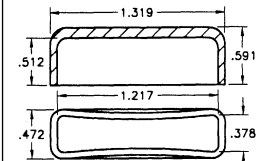
Vinyl

### 5mm



CAT. NO. 3527C

### 3AG



CAT. NO. 4245C

# 3AG (.250") FUSE HOLDERS

Designers' Choice



UL APPROVED MATERIALS • LOW COST • LOW CONTACT RESISTANCE • FLAME RETARDANT

## MOLDED 3AG FUSE HOLDERS

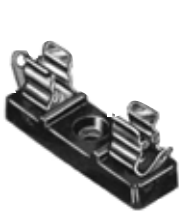
Fuse holder for popular 3AG fuse. Molded with barriers to prevent flashover and withstand test of 1080 VRMS at 60Hz for 1 minute at 3000 VDC for 1 minute.

### SPECIFICATIONS

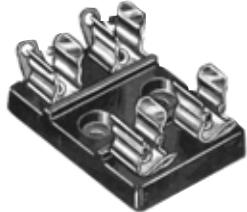
**Molded Base:** Mineral Filled Flame Retardant Alkyd. UL Rated 94V-0. Conforms to the 180 second arc tracking test specification per ASTM 495-D.  
**Clips:** Brass, Bright Finish

### CONTACT RESISTANCE

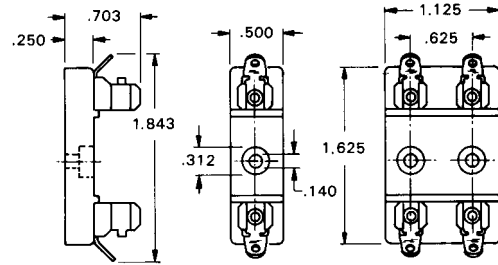
Will not exceed 50mΩ before and after being in atmosphere of 100% R.H. at 150°F (65°C) for 48 hours, then air dried for 1 hour.



CAT. NO. 3523



CAT. NO. 3524

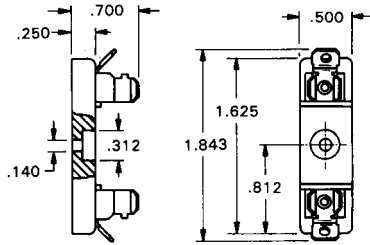


## QUICK-FIT 3AG FUSE HOLDER

One piece construction for 1/4" diameter fuses. Quick-Fit Tab, .250 x .032 size, accepts standard .250 quick-fit female terminals. Eliminates the need for soldering.



CAT. NO. 4243



### SPECIFICATIONS

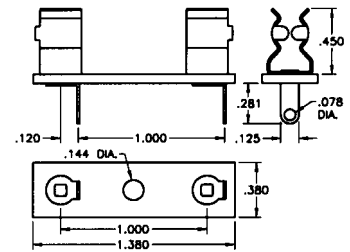
**Base:** Molded Plastic, Flame Retardant, UL Rated 94V-0  
**Clips:** Brass, Nickel Plate

## 3AG PC FUSE HOLDER

Leads are terminated at bottom of base. One piece construction for 1/4" diameter fuses. Ideal where space is a factor. Provides greater mechanical strength than individual clips.

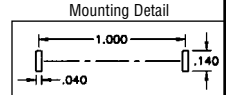


CAT. NO. 3526



### SPECIFICATIONS

**Base:** .062 GPO-3, UL Rated 94V-0  
**Lugs & Clips:** Brass, Tin Plate



## 3AG FUSE HOLDERS

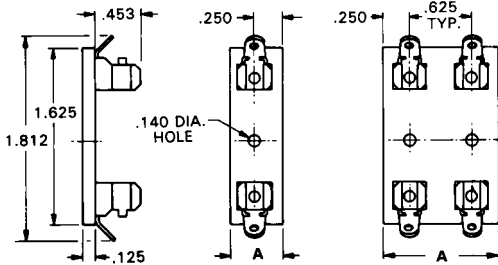


FIG. 1

FIG. 2

### SPECIFICATIONS

**Black Phenolic Base:** .125 thick NEMA Grade XP-FED L-P-509. Max. operating temperature 266°F (130°C) continuous. UL Rated 94-HB.

**Fiberglass Base:** .125 thick NEMA Grade GPO 3. Max. operating temperature 300°F (148°C) continuous. UL Rated 94V-0.

**Clips:** Brass, Nickel Plate

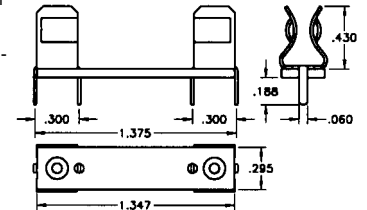
ASSEMBLED WITH CLIP NO. 3535				
BLACK PHENOLIC	FIBER-GLASS	HOLDS NO. OF FUSES	FIG. NO.	A
CAT. NO. 3536	CAT. NO. 3540	1	1	.500
3537	3541	2	2	1.125
3538	3542	3	2	1.750
3539	3543	4	2	2.375

## 3AG PC FUSE HOLDER

One piece construction for 1/4" diameter fuses. Ideal where space is a factor. Economical and compact. Provides greater mechanical strength than individual clips. Ideal for wave soldering.

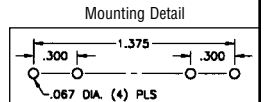


CAT. NO. 4245



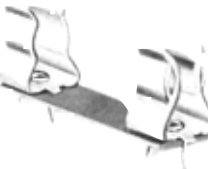
### SPECIFICATIONS

**Base:** .062 GPO-3, UL Rated 94V-0  
**Clips:** Brass, Tin Plate

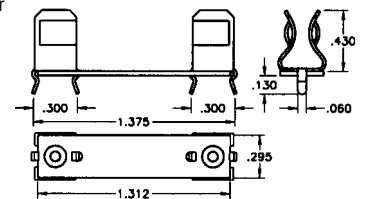


## 3AG SNAP-IN PC FUSE HOLDER

Snap-In design, ideal for wave soldering. One piece construction for 1/4" diameter fuses. Space saving. Economical and compact. Increases production. Excellent mechanical strength.

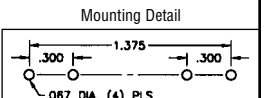


CAT. NO. 4250



### SPECIFICATIONS

**Base:** .032 G-10, UL Rated 94V-0  
**Clips:** Brass, Tin Plate





Designers' Choice

# "AUTO" FUSE CLIPS & HOLDERS

- Available for standard and mini blade fuses
- Thru hole PC mountable, maintains position during wave soldering
- Space saving, low profile designs

- Horizontal and vertical mini blade clip for Littelfuse ATO 297 series and Busmann ATM fuses
- Withstands the rigors of shock and vibration

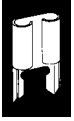
- Horizontal and vertical standard blade clips for Littelfuse ATO 257 series and Busmann ATC fuses
- Holds fuses securely, even after multiple insertions

- Orientation legs assure proper PC installation

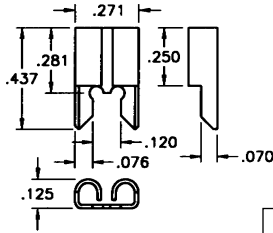
Voltage Rating: 500VAC  
Current Rating: 30 Amps or as noted

## PC AUTOMOTIVE BLADE FUSE CLIPS

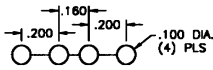
FOR .205 x .025 STANDARD BLADE FUSES



.016 Brass, Nickel Plate

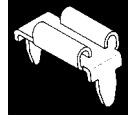


Mounting Detail For Two Clips

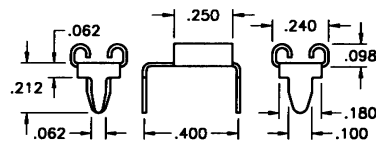


Current Rating: 40 Amps

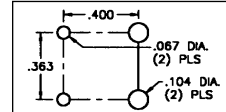
CAT. NO. 3522 - Vertical



.012 Brass, Nickel Plate



Mounting Detail For Two Clips



Current Rating: 40 Amps

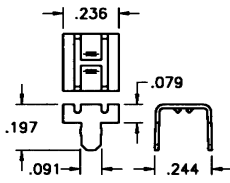
CAT. NO. 3550 - Horizontal

FOR .110 x .032 MINI BLADE FUSES

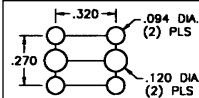


.016 Brass, Nickel Plate

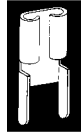
- Low Profile



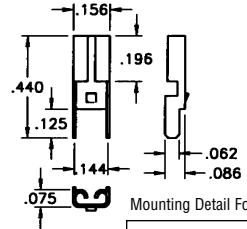
Mounting Detail For Two Clips



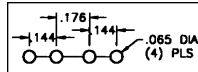
CAT. NO. 3564 - Vertical



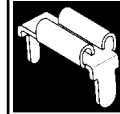
.012 Brass, Nickel Plate



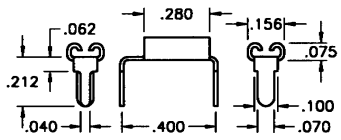
Mounting Detail For Two Clips



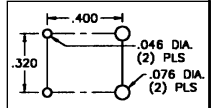
CAT. NO. 3544 - Vertical



.012 Brass, Nickel Plate



Mounting Detail For Two Clips



CAT. NO. 3549 - Horizontal

## PC AUTOMOTIVE BLADE FUSE HOLDERS

- Thru hole PC mountable, maintains position during wave soldering
- Holder design prevents solder wicking
- Withstands the rigors of shock and vibration
- Holds fuse securely, even after multiple insertions
- Suitable for 40 Amp applications

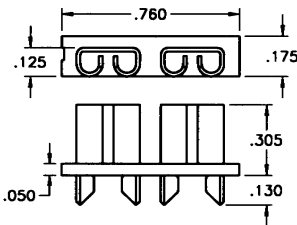
### SPECIFICATIONS

Contacts: Brass, Nickel Plate; Insulator: Glass Filled Nylon, UL Rated 94V-0  
Current Rating: 30 Amps; Voltage Rating: 500VAC  
Temperature Rating: -58°F to +292°F (-50°C to +145°C)

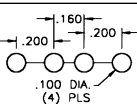
FOR .205 x .025 STANDARD BLADE FUSES



CAT NO. 3522-2



Mounting Detail

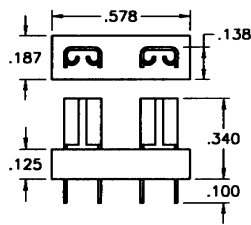


CAT NO. 3544-2

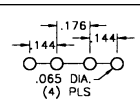
FOR .110 x .032 MINI BLADE FUSES



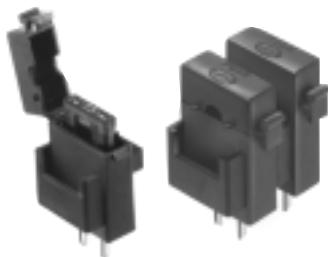
CAT NO. 3544-2



Mounting Detail



## MODULAR PC AUTOMOTIVE BLADE FUSE HOLDER

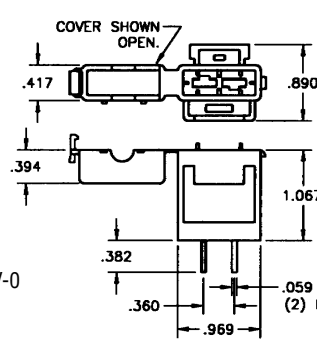


CAT. NO. 3560

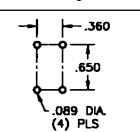
- Designed for standard auto blade fuses
- Fully insulated compact design
- Mounts easily in pre-drilled or punched hole
- Holder has pocket to hold spare fuse
- Safety lever release clip will not open under shock or vibration
- Fuses are installed and removed easily
- May be used individually or easily interlocked for multiple mounting

### SPECIFICATIONS

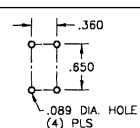
Contacts: Brass, Tin Plate Body: Nylon, UL Rated 94V-0  
Dielectric Strength: (60 seconds) 1500VAC/min.  
Current Rating: 30 Amps



Mounting Detail



Mounting Detail For Two Holders



# QUICK-FIT TERMINALS

Designers' Choice



## .250 "STURDI-MOUNT" PC QUICK-FIT HEADERS

- Ideal for rugged multi-insertion applications
- Pre-assembled header reduces PC assembly costs
- Increases PC board retention strength
- Keeps terminals perpendicular
- Maintains position for wave soldering

AVAILABLE WITH TIN PLATED BRASS OR STEEL TABS

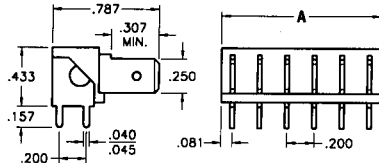


### SPECIFICATIONS

Material: .032 Brass or Steel, Tin Plated  
 Insulator: Thermoplastic, UL Rated 94V-0  
 Voltage Rating: 500VAC Current Rating: 15 Amps  
 Temperature Rating: -58°F to +292°F (-50°C to +145°C)

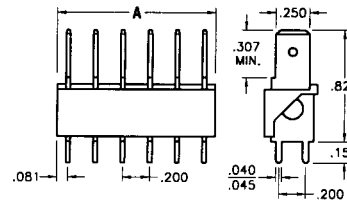
### .250 HORIZONTAL

BRASS TABS CAT. NO.	STEEL TABS CAT. NO.	NO. TABS	A DIM.
7802	7822	2	.362
7803	7823	3	.562
7804	7824	4	.762
7805	7825	5	.962
7806	7826	6	1.162



### .250 VERTICAL

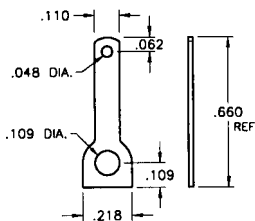
BRASS TABS CAT. NO.	STEEL TABS CAT. NO.	NO. TABS	A DIM.
7812	7832	2	.362
7813	7833	3	.562
7814	7834	4	.762
7815	7835	5	.962
7816	7836	6	1.162



Mtg. Holes: .052 Dia. x .200 Centers

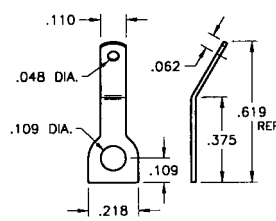
## .110 / .187 / .205 QUICK-FIT RIVET TYPES

### .110 TABS



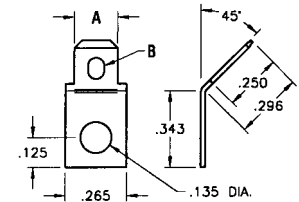
CAT. NO.	MATERIAL
1269	.020 Brass, Tin Plate

### .110 TABS



CAT. NO.	MATERIAL
1270	.020 Brass, Tin Plate

### .187 / .205 TABS



CAT. NO.	MATERIAL	A	B
4005	.020 Brass, Tin Plate	.205	.132 x .070 Slot
4095	.020 Brass, Tin Plate	.187	.078 Dia. Hole



## 45° & 90° QUICK-FIT RIVET TYPES



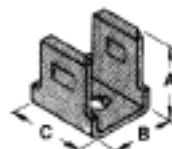
### .110 / .187 / .250 TABS



90 Degree MATERIAL: Bright Brass

CAT. NO.	TAB SIZE	MAT'L THICK	A	B	C	HOLE DIA.
2002	.110	.020	.360	.250	.180	.096
1261	.187	.020	.375	.250	.250	.099
1256	.250	.032	.405	.312	.312	.130

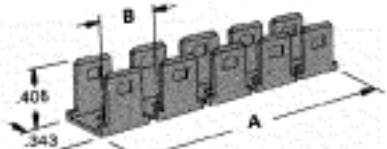
### .110 / .187 / .250 TABS



90 Degree MATERIAL: Bright Brass

CAT. NO.	TAB SIZE	MAT'L THICK	A	B	C	HOLE DIA.
2003	.110	.020	.350	.383	.180	.096
1262	.187	.020	.312	.250	.250	.099
1257	.250	.032	.405	.343	.312	.130

### .250 TAB



MULTIPLE 90° MATERIAL: Bright Brass

CAT. NO.	TAB SIZE	MAT'L THICK	A	B	HOLE DIA.	PAIRS
1005	.250	.032	.703	.375	.130	2
1006	.250	.032	1.075	.375	.130	3
1007	.250	.032	1.422	.375	.130	4
1008	.250	.032	1.837	.375	.130	5



45 Degree MATERIAL: Bright Brass

CAT. NO.	TAB SIZE	MAT'L THICK	A	B	C	HOLE DIA.
2004	.110	.020	.350	.270	.180	.096
1271	.187	.020	.375	.250	.250	.099
1280	.250	.032	.405	.312	.312	.130



45 Degree MATERIAL: Bright Brass

CAT. NO.	TAB SIZE	MAT'L THICK	A	B	C	HOLE DIA.
2005	.110	.020	.350	.383	.180	.096
1263	.187	.020	.312	.375	.265	.135
1258	.250	.032	.405	.343	.312	.130

### CUSTOM QUICK-FIT TERMINALS

Keystone is fully integrated to meet your total design & production needs.

Manufacturing custom designs & modifications of standard items is our specialty.

Quotations on special stampings furnished promptly upon receipt of sample, sketch, print or CAD drawings.



Designers' Choice

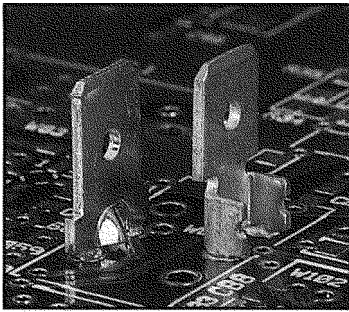
# PC QUICK-FIT TERMINALS



Underwriters Laboratories, Inc.  
Recognized Component Program — UL File Number E201546

UL file number E201546 has been assigned to Keystone Electronics' "Quick-Fit" terminals (see pages 29-31) indicating recognition by Underwriters Laboratories Inc. that they are in compliance with their component program.

Underwriters Laboratories Inc. component program assures that "Quick-Fit" terminals meet the dimensional and performance requirements of the National Electrical Manufacturers Association specification number NEMA2-1982-(1988) and UL310.



.250 TAB			.250 TAB			DUAL .110/.250 TAB		
CAT. NO. 1287	MATERIAL .032 Brass, Tin Plate	MTG. HOLES .052 Dia.	CAT. NO. 1287-ST	MATERIAL .032 Brass, Tin Plate	MTG. HOLES .052 Dia.	CAT. NO. 1282	MATERIAL .032 Brass, Tin Plate	MTG. HOLES .052 Dia.
CAT. NO. 4901	MATERIAL .032 Brass, Tin Plate	MTG. HOLES .067 Dia.	CAT. NO. 4902	MATERIAL .032 Brass, Tin Plate	MTG. HOLES .067 Dia.	CAT. NO. 4908	MATERIAL .032 Brass, Tin Plate	MTG. HOLES .052 Dia.
CAT. NO. 1289	MATERIAL .032 Brass, Tin Plate	MTG. HOLES .052 Dia.	CAT. NO. 1289-ST	MATERIAL .032 Brass, Tin Plate	MTG. HOLES .052 Dia.	CAT. NO. 1281	MATERIAL .032 Brass, Tin Plate	MTG. HOLES .052 Dia.

NOTE: .250" TAB HAND INSERTION TOOL; CAT. NO. 1288, SEE PAGE 32

# PC QUICK-FIT TERMINALS

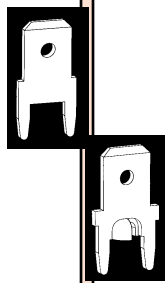
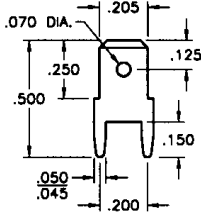
Designers' Choice



## .110/ .187/ .205/ .250 PC QUICK-FIT MALE TYPES

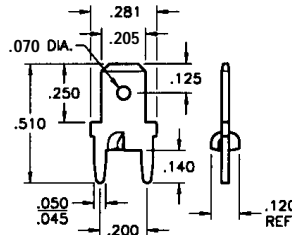


**.205 TAB**



CAT. NO.	MATERIAL	MTG. HOLES
1286	.020 Brass, Tin Plate	.046 Dia.
1213	.032 Brass, Tin Plate	.052 Dia.

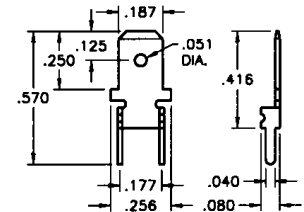
**.205 TAB**



Sturdi-Mount

CAT. NO.	MATERIAL	MTG. HOLES
1286-ST	.020 Brass, Tin Plate	.046 Dia.
1213-ST	.032 Brass, Tin Plate	.052 Dia.

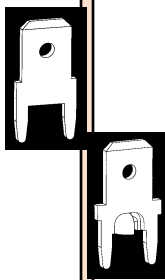
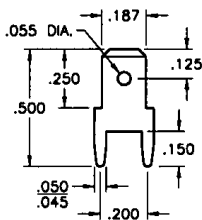
**.187 TAB**



Sturdi-Mount

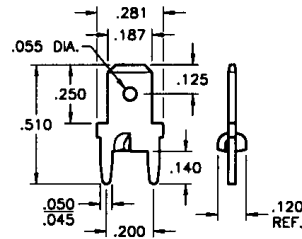
CAT. NO.	MATERIAL	MTG. HOLES
4900	.020 Brass, Tin Plate	.043 Dia.

**.187 TAB**



CAT. NO.	MATERIAL	MTG. HOLES
1285	.020 Brass, Tin Plate	.046 Dia.
1212	.032 Brass, Tin Plate	.052 Dia.

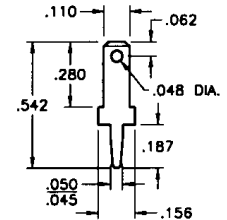
**.187 TAB**



Sturdi-Mount

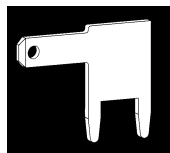
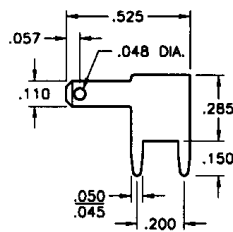
CAT. NO.	MATERIAL	MTG. HOLES
1285-ST	.020 Brass, Tin Plate	.046 Dia.
1212-ST	.032 Brass, Tin Plate	.052 Dia.

**.110 TAB**



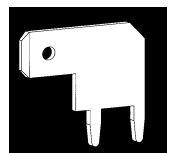
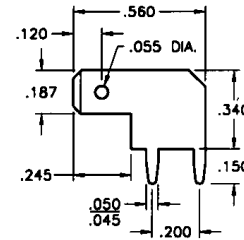
CAT. NO.	MATERIAL	MTG. HOLE
1267	.020 Brass, Tin Plate	.046 Dia.
1211	.032 Brass, Tin Plate	.052 Dia.

**.110 TAB**



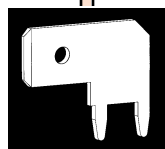
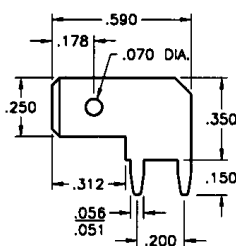
CAT. NO.	MATERIAL	MTG. HOLES
4903	.020 Brass, Tin Plate	.046 Dia.
4906	.032 Brass, Tin Plate	.052 Dia.

**.187 TAB**



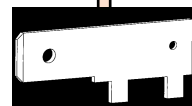
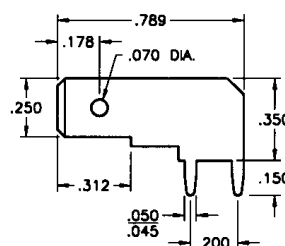
CAT. NO.	MATERIAL	MTG. HOLES
4904	.020 Brass, Tin Plate	.046 Dia.
4907	.032 Brass, Tin Plate	.052 Dia.

**.250 TAB**



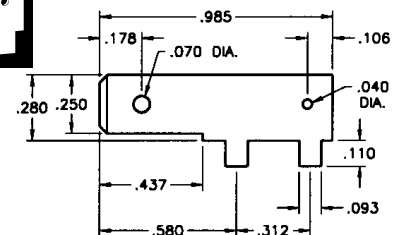
CAT. NO.	MATERIAL	MTG. HOLES
4966	.032 Brass, Tin Plate	.056 Dia.

**.250 TAB**



CAT. NO.	MATERIAL	MTG. HOLES
1266	.032 Brass, Tin Plate	.052 Dia.

**.250 TAB**



CAT. NO.	MATERIAL	MTG. HOLES
1265	.032 Brass, Tin Plate	.106 Dia.

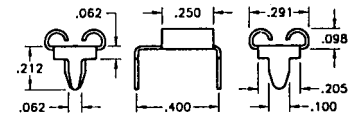
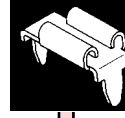
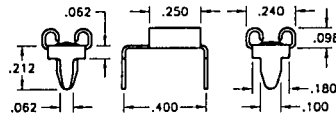
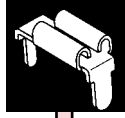
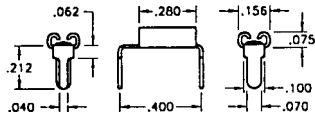


Designers' Choice

# PC QUICK-FIT TERMINALS

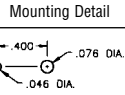
## .110 / .187 / .205 / .250 PC QUICK-FIT FEMALE TYPES

### .110 HORIZONTAL



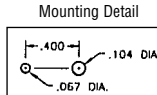
**MATERIAL:**  
.012 Brass, Nickel Plate

CAT. NO.	ACCEPTS TAB
3545	.110 × .020
3549	.110 × .032



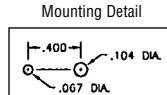
**MATERIAL:**  
.012 Brass, Nickel Plate

CAT. NO.	ACCEPTS TAB
3546	.205 × .020
3550	.205 × .025
	.205 × .032

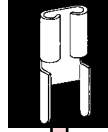
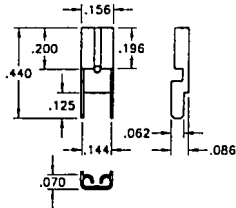


**MATERIAL:**  
.016 Brass, Nickel Plate

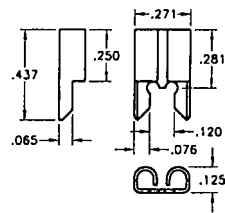
CAT. NO.	ACCEPTS TAB
3547	.250 × .032



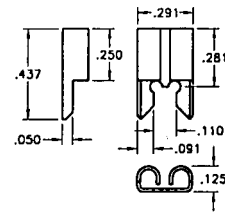
### .110 VERTICAL



### .205 VERTICAL

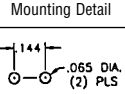


### .250 VERTICAL



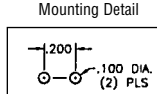
**MATERIAL:**  
.012 Brass, Nickel Plate

CAT. NO.	ACCEPTS TAB
3534	.110 × .020
3544	.110 × .032



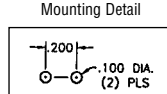
**MATERIAL:** Brass, Nickel Plate

CAT. NO.	ACCEPTS TAB	MAT'L THICK
3525	.205 × .020	.012
3522	.205 × .025	.016
	.205 × .032	.016

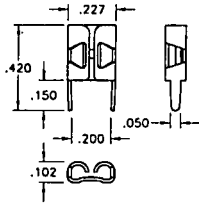


**MATERIAL:**  
.016 Brass, Nickel Plate

CAT. NO.	ACCEPTS TAB
3528	.250 × .032

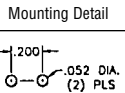


### .187 VERTICAL

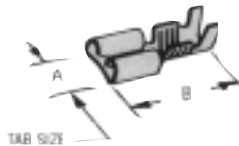


**MATERIAL:**  
.016 Brass, Nickel Plate

CAT. NO.	ACCEPTS TAB
3548	.187 × .020
3551	.187 × .032



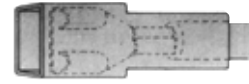
### QUICK-FIT FEMALES



**MATERIAL:** Tinned Brass

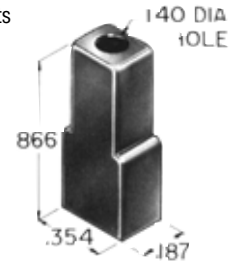
CAT. NO.	A DIM TAB SIZE	B DIM LENGTH	AWG SIZE	MAT'L THICK
1252	.110 × .020	.640	18-22	.010
1264	.187 × .020	.576	16-22	.013
4469	.205 × .020	.640	16-20	.013
4470	.250 × .032	.750	16-20	.016

### .250 QUICK-FIT VINYL BOOT



- Easily slips over terminal
- Insulated and protects

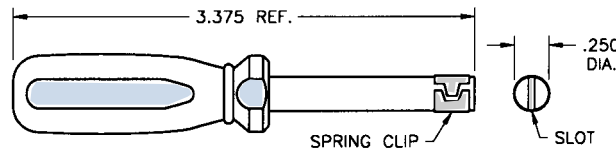
CAT. NO.	BOOT COLOR
4471	CLEAR
4472	RED
4473	BLUE
4474	YELLOW



## MALE "QUICK-FIT" INSERTION TOOL

Designed to install .250 male "Quick-Fit" terminals quickly and easily

- Insert terminal into slot, spring clip will hold terminal securely for positioning
- Align terminal with mounting holes and "press-fit" to secure firmly in place
- Lift tool to release terminal



CAT. NO. 1288

# SMT/THM TEST POINTS

Designers' Choice

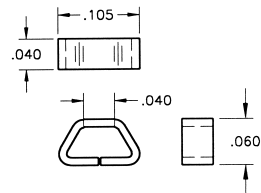


## (SMT) SURFACE MOUNT TEST POINTS ON TAPE & REEL

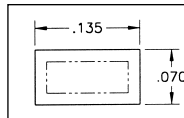


### MINIATURE

- Ultra low profile ideally suited for advanced surface mount printed circuit board applications
- Designed for long life and durability
- Manufactured using flat wire to provide a large mounting surface area
- Ideal for use with miniature probes, clips, and hooks
- Efficient, safe, board level testing



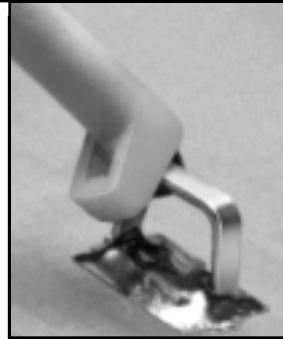
Pad Layout



#### SPECIFICATIONS

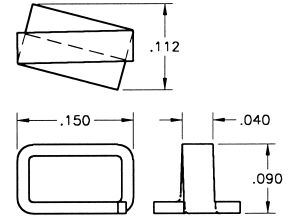
Contact Material: .010 Phosphor Bronze  
 Contact Finish: Tin Lead  
 Tape Material: 8mm wide; 4mm pitch; conductive polycarbonate carrier tape meets ANSI/EIA-481 standard  
 Reel Size: Cat. No. 5015: 7 inches – 1000 pieces per reel  
 Cat. No. 5017: 13 inches – 5000 pieces per reel

CAT. NO. 5015 (Tape & Reel)  
 CAT. NO. 5017 (Tape & Reel)

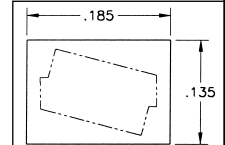


### COMPACT

- Unique design provides exceptional strength and durability
- Simplifies testing on dense SMT circuit boards
- Ideal for use with most standard probes, clips and hooks
- Efficient, safe, board level testing



Pad Layout



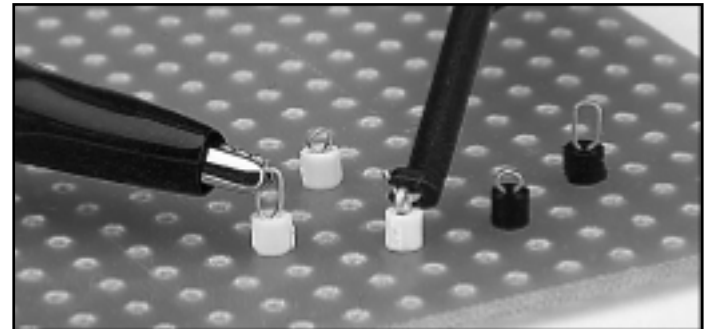
#### SPECIFICATIONS

Contact Material: .015 Phosphor Bronze  
 Contact Finish: Tin Lead  
 Tape Material: 12mm wide; 4mm pitch; conductive polycarbonate carrier tape meets ANSI/EIA-481 standard  
 Reel Size: Cat. No. 5016: 7 inches – 1000 pieces per reel  
 Cat. No. 5018: 13 inches – 5000 pieces per reel

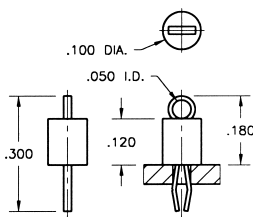
CAT. NO. 5016 (Tape & Reel)  
 CAT. NO. 5018 (Tape & Reel)

## (THM) THRU-HOLE MOUNT TEST POINTS – COLOR KEYED

- Color keyed for visibility and quick identification
- Economical choice for PC test point terminations
- Snap-fit mounting provides positive retention for wave soldering
- Wire form loop for safe, non-slip testing
- Space saving, ultra low and low profile designs
- High profile design for difficult to reach applications
- Suitable for high density packaging on .062 and .093 PC boards
- Practical replacement for wire-wrap posts and turrets
- Secure grip for J hooks, EZ hooks, grabbers, alligator clips, tips or probes
- Plastic base strengthens terminal for positive holding power
- Ideal for reliable production testing and field service troubleshooting



### MINIATURE

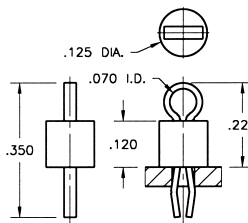


CAT. NO.	BASE COLOR
5000	RED
5001	BLACK
5002	WHITE
5003	ORANGE
5004	YELLOW

#### SPECIFICATIONS

Terminal: .010 x .020 Phosphor Bronze Wire, Tin Plate  
 Base: Valox, UL 94V-0  
**MOUNTING DETAIL**  
 Mtg. Hole: .040 Diameter  
 Mtg. Centers: .100 x .100

### COMPACT

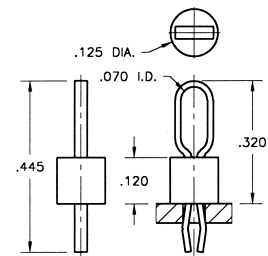


CAT. NO.	BASE COLOR
5005	RED
5006	BLACK
5007	WHITE
5008	ORANGE
5009	YELLOW

#### SPECIFICATIONS

Terminal: .015 x .032 Phosphor Bronze Wire, Tin Plate  
 Base: Valox, UL 94V-0  
**MOUNTING DETAIL**  
 Mtg. Hole: .063 Diameter  
 Mtg. Centers: .125 x .125

### MULTIPURPOSE



CAT. NO.	BASE COLOR
5010	RED
5011	BLACK
5012	WHITE
5013	ORANGE
5014	YELLOW

#### SPECIFICATIONS

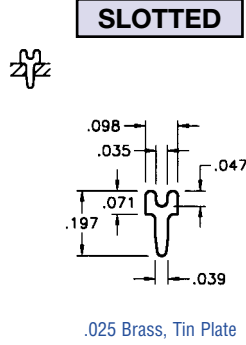
Terminal: .015 x .032 Phosphor Bronze Wire, Tin Plate  
 Base: Valox, UL 94V-0  
**MOUNTING DETAIL**  
 Mtg. Hole: .063 Diameter  
 Mtg. Centers: .125 x .125



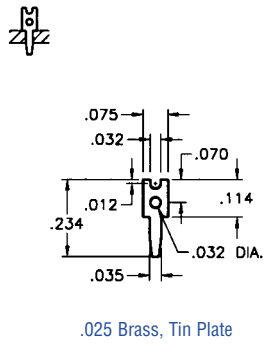
# PC TEST POINT TERMINALS

## PC TEST POINTS – SLOTTED & LOOP TYPES

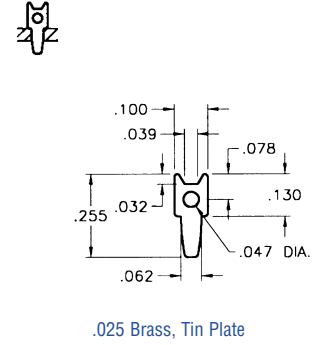
- Low profile, space saving designs for dense packaging
- Wide variety of configurations to suit most applications
- Safe, practical, economical replacement for wire-wrap posts
- Easy mount design, ideal for wave soldering
- Re-fit PC boards without need for re-design
- Provides easy access for production testing and field service troubleshooting
- Positive grip when using J hooks, EZ hooks, grabbers, clips, tips and probes
- Custom test point terminals can be manufactured to your specifications
- Other platings and materials available upon request



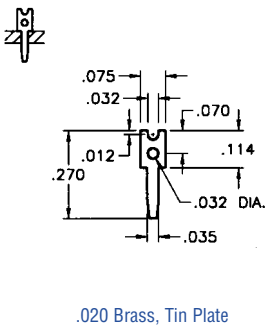
CAT. NO. 4950



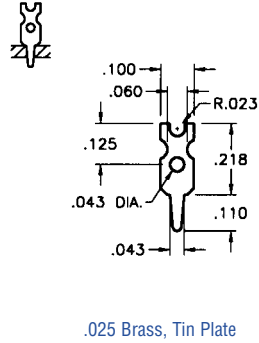
CAT. NO. 1030



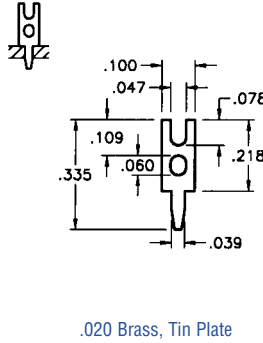
CAT. NO. 1032



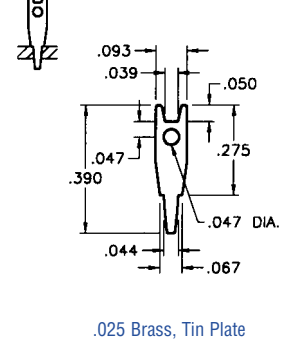
CAT. NO. 1031



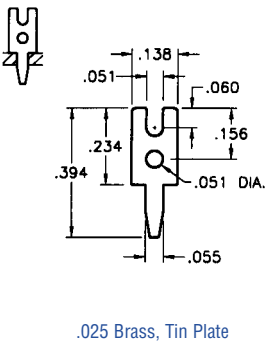
CAT. NO. 1034



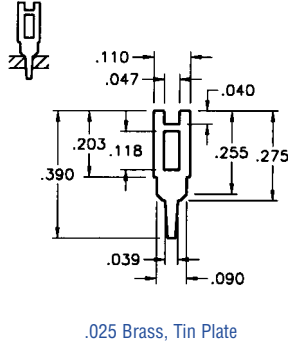
CAT. NO. 1035



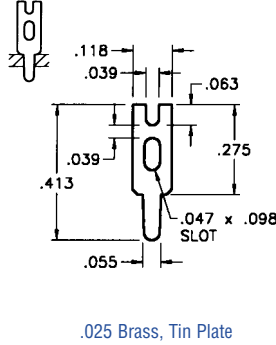
CAT. NO. 1036



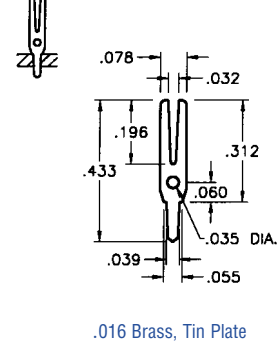
CAT. NO. 1039



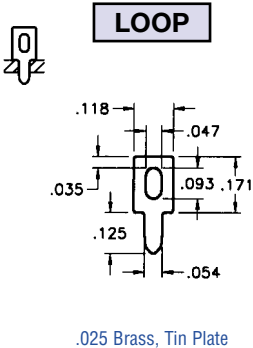
CAT. NO. 1040



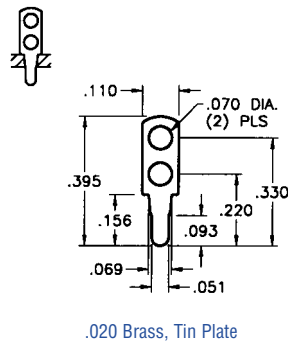
CAT. NO. 4951



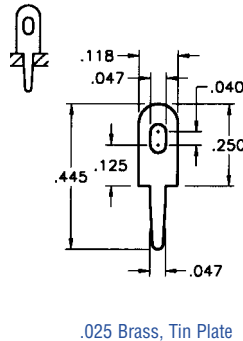
CAT. NO. 1037



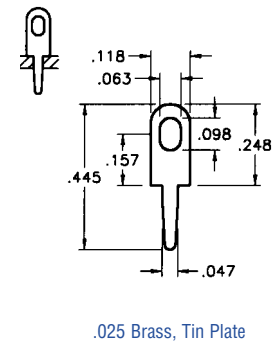
CAT. NO. 1033



CAT. NO. 1038



CAT. NO. 1249



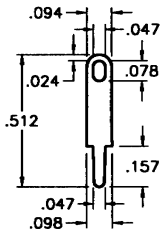
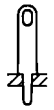
CAT. NO. 4952

# PC TEST POINT TERMINALS

Designers' Choice

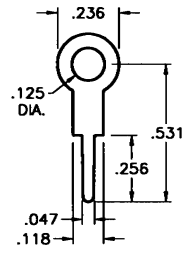


## PC TEST POINTS - LOOP TYPES



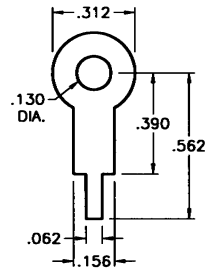
.020 Brass, Tin Plate

CAT. NO. 4953



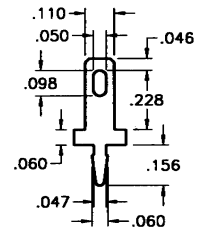
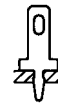
.020 Brass, Tin Plate

CAT. NO. 4954



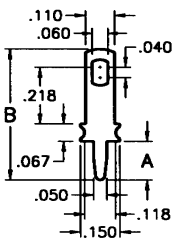
.015 Brass, Tin Plate

CAT. NO. 680



.020 Brass, Tin Plate

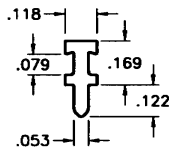
CAT. NO. 1250



.032 Brass, Tin Plate

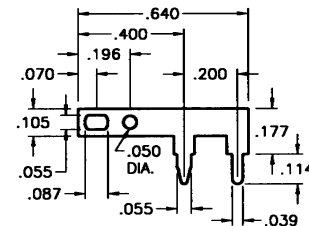
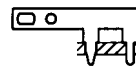
CAT. NO.	A	B
1041	.275	.630
1046	.150	.503

CAT. NO. 1041



.025 Brass, Tin Plate

CAT. NO. 4955



.025 Brass, Tin Plate

CAT. NO. 1045

### CUSTOM TEST POINT TERMINALS

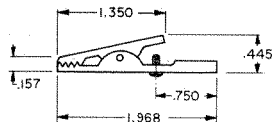
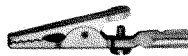
Keystone is fully integrated to meet your total design & production needs.

Manufacturing custom designs & modifications of standard items is our specialty.

Quotations on special stampings furnished promptly upon receipt of sample, sketch, print or CAD drawings.

## ALLIGATOR CLIPS

### LARGE CLIP • SCREW CONNECTION



JAW SPREAD  
.315 max.

CAT. NO. 5048

MATERIAL: Clip: Steel, Nickel Plate

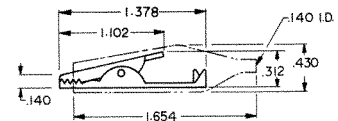
### MEDIUM CLIP • SOLDER CONNECTION WITH STRAIN RELIEF



INSULATED



CAT. NO. 5038 - NON-INSULATED



JAW SPREAD  
.236 max.

CAT. NO.	INSULATOR COLOR
5039	RED
5040	BLACK

MATERIAL: Clip: Steel, Nickel Plate Insulator: Vinyl

### SMALL CLIP • SOLDER CONNECTION WITH STRAIN RELIEF

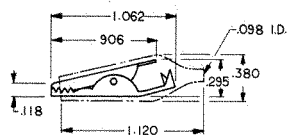


INSULATED



CAT. NO. 5033 - NON-INSULATED

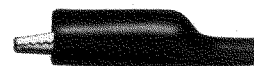
CAT. NO.	INSULATOR COLOR
5034	RED
5035	BLACK
5036	GREEN
5037	YELLOW



JAW SPREAD  
.236 max.

MATERIAL: Clip: Steel, Nickel Plate Insulator: Vinyl

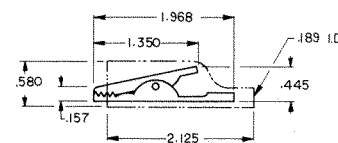
### LARGE CLIP • SOLDER CONNECTION (BARREL ACCEPTS WIRE OR STANDARD BANANA PLUGS)



INSULATED



CAT. NO. 5044 - NON-INSULATED



JAW SPREAD  
.315 max.


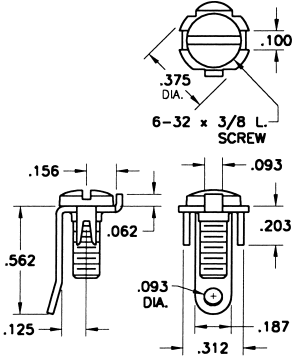
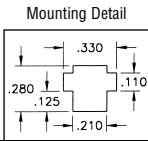
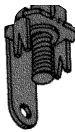
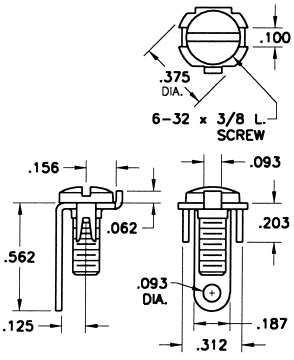
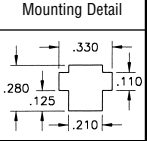

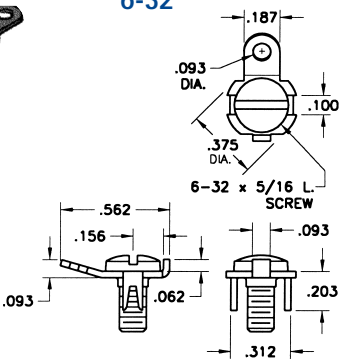
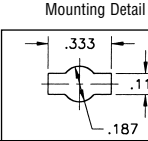
CAT. NO.	INSULATOR COLOR
5045	RED
5046	BLACK

MATERIAL: Clip: Steel, Nickel Plate Insulator: Vinyl


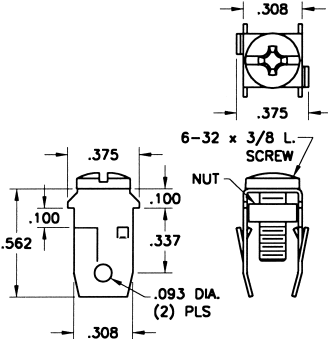
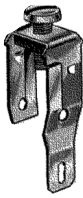
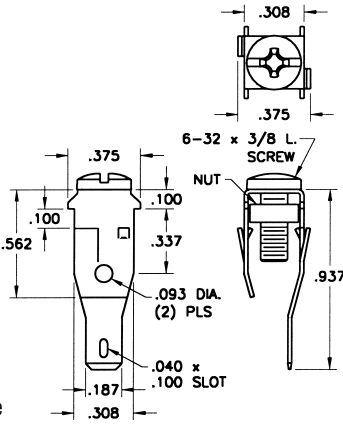


Designers' Choice

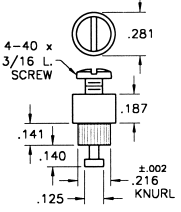
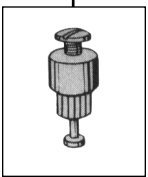
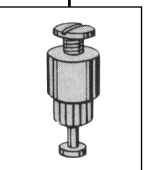
# SCREW TERMINALS

OFFSET LEG	STRAIGHT LEG	SOLDER TAB
 <p><b>6-32</b></p>  <p>6-32 x 3/8 L. SCREW</p> <p><b>SPECIFICATIONS</b> Terminal: .032 Steel, Tin Plate Screw: Steel, Nickel Plate (Screw Installed &amp; Captivated) <b>CAT. NO. 1248</b></p> <p>Mounting Detail</p> 	 <p><b>6-32</b></p>  <p>6-32 x 3/8 L. SCREW</p> <p><b>SPECIFICATIONS</b> Terminal: .032 Steel, Tin Plate Screw: Steel, Nickel Plate (Screw Installed &amp; Captivated) <b>CAT. NO. 1215</b></p> <p>Mounting Detail</p> 	 <p><b>6-32</b></p>  <p>6-32 x 5/16 L. SCREW</p> <p><b>SPECIFICATIONS</b> Terminal: .032 Steel, Tin Plate Screw: Steel, Nickel Plate (Screw Installed &amp; Captivated) <b>CAT. NO. 1232</b></p> <p>Mounting Detail</p> 

## PRESS-FIT SCREW TERMINALS

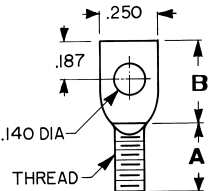
SOLDER TYPE	.187 QUICK-FIT TYPE
 <p><b>SOLDER TYPE</b></p>  <p>6-32 x 3/8 L. SCREW</p> <p><b>SPECIFICATIONS</b> Terminal: .020 Steel, Tin Plate Screw: Steel, Zinc Plate <b>CAT. NO. 1272</b> (Screw Installed &amp; Captivated)</p> <p>Mounting Detail</p> <p>Press-fit into .312 sq. hole</p>	 <p><b>.187 QUICK-FIT TYPE</b></p>  <p>6-32 x 3/8 L. SCREW</p> <p><b>SPECIFICATIONS</b> Terminal: .020 Steel, Tin Plate Screw: Steel, Zinc Plate <b>CAT. NO. 1273</b> (Screw Installed &amp; Captivated)</p> <p>Mounting Detail</p> <p>Press-fit into .312 sq. hole</p>

## BINDING POST TERMINALS (RIVET TYPE)

4-40	6-32	8-32
 <p><b>4-40</b></p> <p>4-40 x 3/16 L. SCREW</p> <p><b>SPECIFICATIONS</b> Terminal: Brass, Tin Plate Screw: Steel, Nickel Plate (Screw Supplied Unassembled) <b>CAT. NO. 1537</b></p> <p>FOR 3/32 BOARD</p>	 <p><b>6-32</b></p> <p>6-32 x 3/16 L. SCREW</p> <p><b>SPECIFICATIONS</b> Terminal: Brass, Tin Plate Screw: Steel, Nickel Plate (Screw Supplied Unassembled) <b>CAT. NO. 1535</b></p> <p>FOR 3/32 BOARD</p>	 <p><b>8-32</b></p> <p>8-32 x 3/16 L. SCREW</p> <p><b>SPECIFICATIONS</b> Terminal: Brass, Tin Plate Screw: Steel, Nickel Plate (Screw Supplied Unassembled) <b>CAT. NO. 1536</b></p> <p>FOR 1/8 BOARD</p>

## SPADE BOLTS

**6-32 & 8-32**



**MATERIAL:** Steel, Zinc Plate

CAT. NO.	A	B	Thread
1259	3/8	13/32	6-32
1260	3/8	1/2	8-32

# SCREW TERMINALS

Designers' Choice

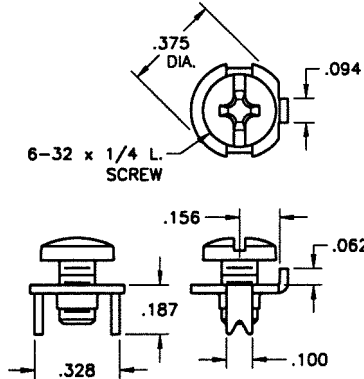


## 6-32 INSERT TERMINAL

These sturdy, easy to mount space saving 6-32 insert terminals are available with screws installed and captivated. They are also available with screw unassembled or without a screw.

### PRINCIPLE FEATURES

- Easy to connect using solid or stranded wire, crimp lugs or terminals
- Anti-rotation tab for use with spade terminals
- Supplied with screw installed and captivated, with screw unassembled, or without screw

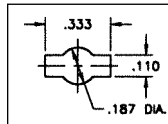


### SPECIFICATIONS

Rated: 15 Amps  
Terminal: .032 Brass, Tin Plate  
Screw: Combination drive, Stainless Steel

- CAT. NO. 1201 (Screw Installed & Captivated)  
CAT. NO. 1298 (Screw Supplied Unassembled)  
CAT. NO. 1284 (Supplied Less Screw)

### Mounting Detail

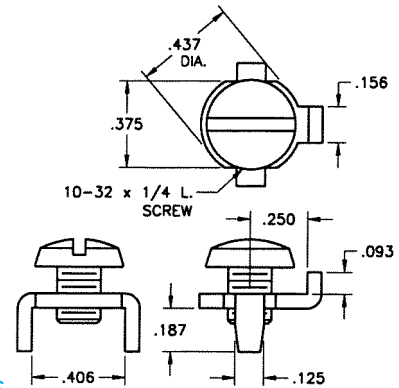


## 10-32 INSERT TERMINAL

These sturdy, low cost 10-32 PC mount terminals, feature an anti-rotation tab for use with spade terminals. They are available with the screw installed and captivated, the screw unassembled or without a screw.

### PRINCIPLE FEATURES

- Easy to connect using solid or stranded wire, crimp lugs or terminals
- Anti-rotation tab for use with spade terminals
- Supplied with screw installed and captivated, with screw unassembled, or without screw

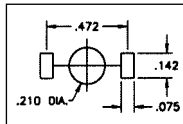


### SPECIFICATIONS

Rated: 30 Amps  
Terminal: .062 Brass, Tin Plate  
Screw: Stainless Steel

- CAT. NO. 1202 (Screw Installed & Captivated)  
CAT. NO. 1299 (Screw Supplied Unassembled)  
CAT. NO. 1293 (Supplied Less Screw)

### Mounting Detail

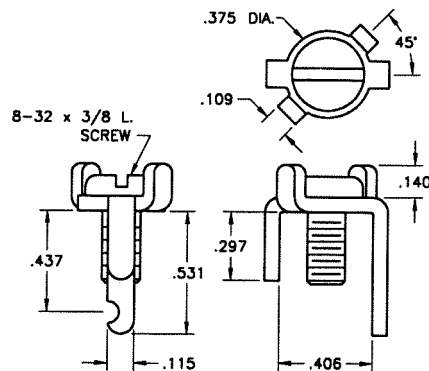


## 8-32 HEAVY DUTY TERMINAL

These 8-32 heavy duty terminals easily mount on PC boards and feature a notched leg that facilitates good mechanical and solder connections below the circuit board.

### PRINCIPLE FEATURES

- Anti-rotation tab for use with spade terminals
- Below the board notched leg, to facilitate mechanical and solder connections
- Easy to connect using solid or stranded wire, crimp lugs or terminals
- Available with screw installed or unassembled

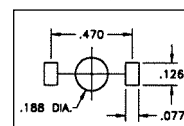


### SPECIFICATIONS

Rated: 15 Amps  
Terminal: .064 Brass, Tin Plate  
Screw: Brass, Tin Plate

- CAT. NO. 1209 (Screw Installed)  
CAT. NO. 1207 (Screw Supplied Unassembled)

### Mounting Detail

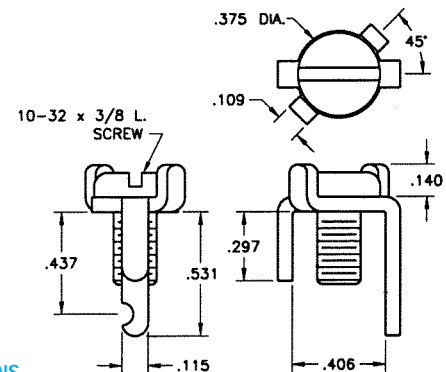


## 10-32 HEAVY DUTY TERMINAL

These heavy duty 10-32 terminals are available with the screw installed or unassembled, and feature easy access to connect solid or stranded wire, crimp type lugs or terminals.

### PRINCIPLE FEATURES

- Anti-rotation tab for use with spade terminals
- Below the board notched leg, to facilitate mechanical and solder connections
- Easy to connect using solid or stranded wire, crimp lugs or terminals
- Available with screw installed or unassembled

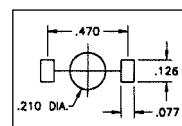


### SPECIFICATIONS

Rated: 30 Amps  
Terminal: .064 Brass, Tin Plate  
Screw: Steel, Nickel Plate

- CAT. NO. 1283 (Screw Installed)  
CAT. NO. 1208 (Screw Supplied Unassembled)

### Mounting Detail





Designers' Choice

# PC SCREW TERMINALS

## LOW PROFILE - PC SCREW TERMINALS

These easy to mount screw terminals are ideally suited for high density packaging and are available unassembled or with the screw installed and captivated. They are a practical alternative to PC screw type edge connectors, barrier blocks, terminal boards and terminal strips.

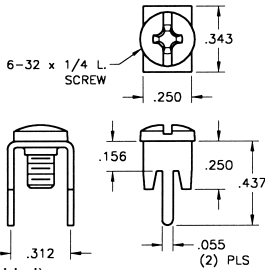
### PRINCIPAL FEATURES

- Low profile
- Stable, no-rock design
- Easily mounts in pre-drilled or stamped holes
- Accepts 12-22 AWG solid or stranded wire, scrimp type terminals or lugs
- Space saving and time saving
- Combination drive, binding head screw

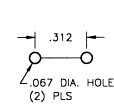


### SPECIFICATIONS

Rated: 15 Amps  
Terminal:  
.032 Brass, Tin Plate  
Binding Head Screw:  
Brass, Nickel Plate



Mounting Detail



CAT. NO. 7784  
(Supplied Less Screw)

CAT. NO. 8198  
(Screw Supplied Unassembled)

CAT. NO. 7778  
(Screw Installed & Captivated)

A practical, low-cost alternative to PC screw type edge connectors, barrier blocks, terminal boards and terminal strips. Supplied unassembled or with screw installed and captivated.

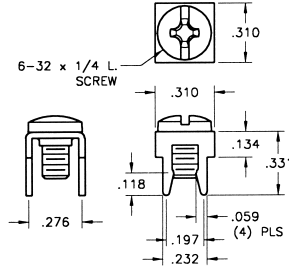
### PRINCIPAL FEATURES

- Low profile
- Stable, no-rock design with exclusive anti-rotational feature
- Ideally suited for high-density packaging
- Space saving and time saving
- Combination drive, binding head screw

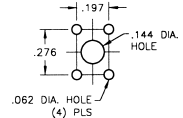


### SPECIFICATIONS

Rated: 15 Amps  
Terminal:  
.032 Brass, Tin Plate  
Binding Head Screw:  
Brass, Nickel Plate



Mounting Detail



CAT. NO. 7785  
(Supplied Less Screw)

CAT. NO. 8195  
(Screw Supplied Unassembled)

CAT. NO. 7775  
(Screw Installed & Captivated)

## 30 AMP - PC SCREW TERMINALS

A practical, low-cost alternative to PC screw type edge connectors, barrier blocks, terminal boards and terminal strips. Supplied unassembled or with screw installed and captivated.

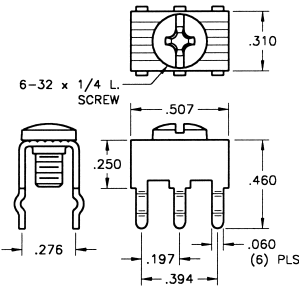
### PRINCIPAL FEATURES

- Compact, heavy duty design
- Six snap-in legs for total stability
- Serrated top surface secures connection
- Combination drive, binding head screw

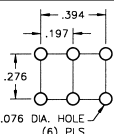


### SPECIFICATIONS

Rated: 30 Amps  
Terminal:  
.032 Brass, Tin Plate  
Binding Head Screw:  
Brass, Nickel Plate



Mounting Detail



CAT. NO. 7786  
(Supplied Less Screw)

CAT. NO. 8197  
(Screw Supplied Unassembled)

CAT. NO. 8199  
(Screw Installed & Captivated)

### HEAVY DUTY

This heavy duty screw terminal has been designed to carry 30 Amps, while maintaining a space saving compact profile, making it ideal for high density packaging.

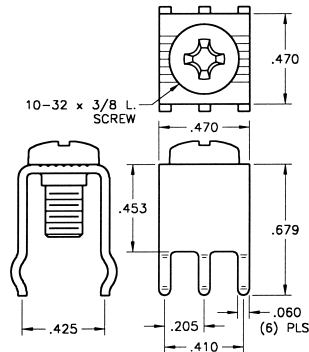
### PRINCIPAL FEATURES

- Compact, heavy duty design
- Six snap-in legs for total stability
- Serrated top surface secures connection

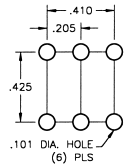


### SPECIFICATIONS

Rated: 30 Amps  
Terminal:  
.045 Brass, Tin Plate  
Screw: Stainless Steel



Mounting Detail



CAT. NO. 7787  
(Supplied Less Screw)

CAT. NO. 8196  
(Screw Supplied Unassembled)

## CUSTOM PC SCREW TERMINALS

Keystone is fully integrated to meet your total design & production needs.

Manufacturing custom designs & modifications of standard items is our specialty.

Quotations on special PC screw terminals furnished promptly upon receipt of sample, sketch, print or CAD drawings.

# PC SCREW TERMINALS

Designers' Choice

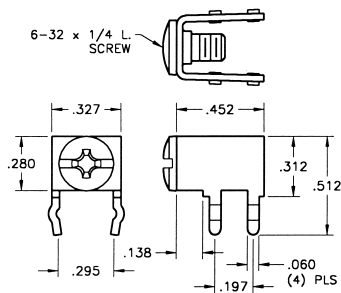
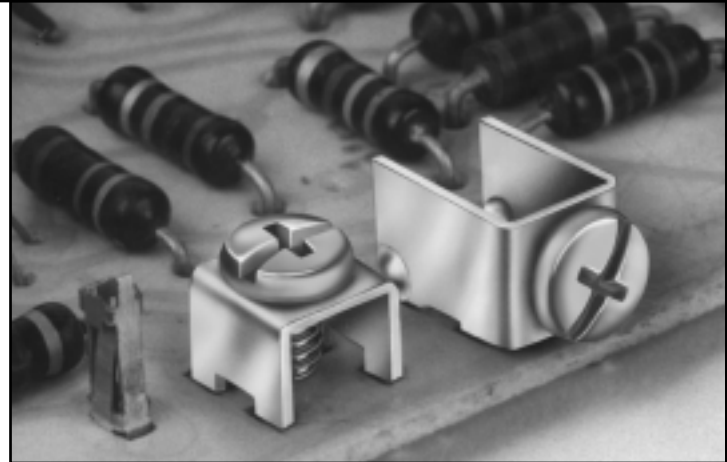


## PC MOUNT SCREW TERMINALS

These easy-to-mount, multipurpose screw type terminals are a practical, low-cost alternative to PC screw type edge connectors, barrier blocks, terminal boards and terminal strips. Steadfast and easy to install, will accommodate solid or stranded wire, crimp-type terminals or lugs. Multi-placement of these low-profile terminals make them ideally suited for high-density packaging. Supplied unassembled or with screw installed and captivated.

### PRINCIPAL FEATURES

- Low profile
- Stable, no-rock design with exclusive anti-rotational feature
- Easily mounts with four legs into pre-drilled or punched holes
- Accepts 14-22 AWG solid or stranded wire, crimp-type terminals or lugs
- Ideally suited for high-density packaging
- Available in horizontal or vertical mounting
- Space-saving and time saving
- Easy accessibility for PC board testing
- Binding screw is positioned above board level to avoid wicking during wave soldering
- Terminals are made of Brass with Tin Plate
- Supplied with a combination drive 6-32 binding head screw



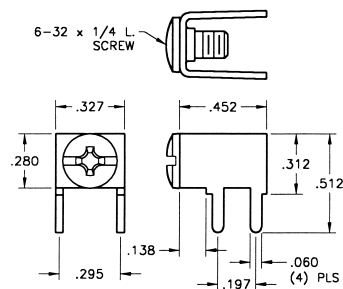
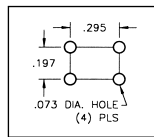
CAT. NO. 7779 (Supplied Less Screw)  
 CAT. NO. 7690 (Screw Supplied Unassembled)  
 CAT. NO. 7692 (Screw Installed & Captivated)

### HORIZONTAL TYPE

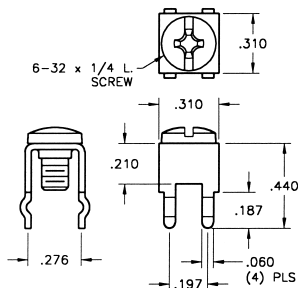
#### SPECIFICATIONS

Rated: 15 Amps  
 Terminal:  
 .032 Thick Brass, Tin Plate  
 Binding Head Screw:  
 Brass, Nickel Plate

#### Mounting Detail



CAT. NO. 7781 (Supplied Less Screw)  
 CAT. NO. 8190 (Screw Supplied Unassembled)  
 CAT. NO. 7700 (Screw Installed & Captivated)



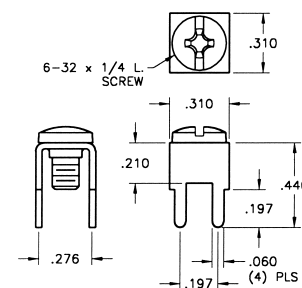
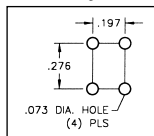
CAT. NO. 7780 (Supplied Less Screw)  
 CAT. NO. 7691 (Screw Supplied Unassembled)  
 CAT. NO. 7693 (Screw Installed & Captivated)

### VERTICAL TYPE

#### SPECIFICATIONS

Rated: 15 Amps  
 Terminal:  
 .032 Thick Brass, Tin Plate  
 Binding Head Screw:  
 Brass, Nickel Plate

#### Mounting Detail



CAT. NO. 7782 (Supplied Less Screw)  
 CAT. NO. 8191 (Screw Supplied Unassembled)  
 CAT. NO. 7701 (Screw Installed & Captivated)

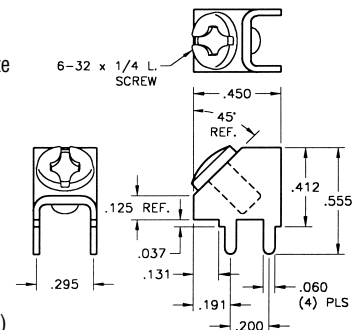
## CUSTOM DESIGNS



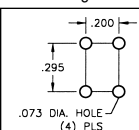
## 45° PC MOUNT SCREW TERMINAL

#### SPECIFICATIONS

Rated: 15 Amps  
 Terminal: .032 Thick Brass, Tin Plate  
 Binding Head Screw: Brass, Nickel Plate



#### Mounting Detail



CAT. NO. 7783 (Supplied Less Screw)  
 CAT. NO. 8189 (Screw Supplied Unassembled)  
 CAT. NO. 7702 (Screw Installed & Captivated)



Designers' Choice

# MODULAR PC TERMINAL BLOCKS

## PC TERMINAL BLOCKS

### MODULAR INTERLOCKS



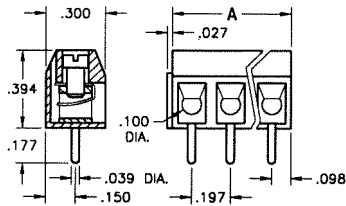
#### Horizontal Wire Entry

- Low Profile
- Mounts easily in pre-drilled or stamped holes
- Wire guard helps prevent damage to conductors

5mm SPACING		
CAT. NO.	POSITIONS	A DIM.
8718	2	.394
8719	3	.591

#### MATERIAL

Contact: Brass, Tin Plate  
Housing: Blue PBT, UL Rated 94V-0  
Screw: Steel, Zinc Plate & Clear Chromate (captivated)



Recommended Mtg. Hole Size: .047

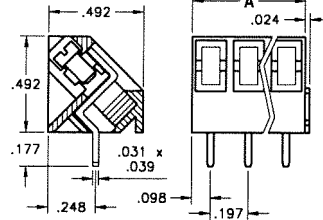
### SPECIFICATIONS

#### ELECTRICAL

Current Rating: 16 Amps  
Dielectric Strength: 2500V  
Insulation Breakdown: 1500VAC/min.  
Rated Voltage: 250V

#### MECHANICAL

Operating Temp: 22°F to 248°F (-30°C to 120°C)  
Peak Temp: +393°F (+200°C)  
Wire Size: Accepts #22-14 AWG



Recommended Mtg. Hole Size: .051

### MODULAR INTERLOCKS



#### 45° Wire Entry

- Easy access to termination points on densely packaged PC boards
- Screw heads are on top of unit to facilitate access
- Wire guard helps prevent damage to conductors

5mm SPACING		
CAT. NO.	POSITIONS	A DIM.
8720	2	.394
8721	3	.591

- Modular Interlocks allow expansion up to 24 positions

## PLUGGABLE WITH PIN STRIPS

### MODULAR INTERLOCKS



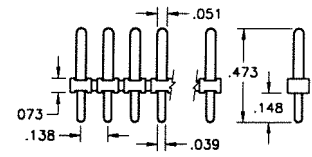
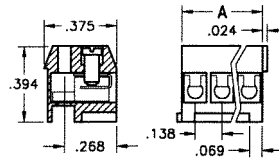
These unique modular terminal blocks are convenient and easy to use. They may be interlocked to achieve a maximum of 24 positions. The header pins, for both the 6 and 10 Amp models are supplied in strips of 24. Simply snap off the desired number of positions required and insert into PC board. The modular terminal block can be plugged into the header strip at anytime.

- Space saving low profile design
- Easy access horizontal wire entry
- Convenient screw head access on top of terminal block
- Headers mount easily in pre-drilled or stamped holes
- Wire guards help prevent damage to conductors
- Accepts #22-16 AWG wire

Pin Header Strips  
(24 pins per strip)

Recommended Mtg. Hole Size: .047

3.5mm SPACING			
CAT. NO.	POSITIONS	A	CURRENT RATING
8722	2	.276	6 Amps
8723	3	.413	6 Amps



CAT. NO. 8724

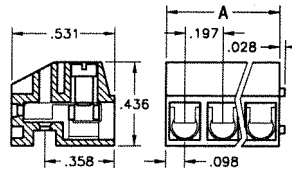
### SPECIFICATIONS

**MATERIAL**  
Contact: Brass, Tin Plate  
Header Pins: Brass, Tin Plate  
Housing: Blue PBT, UL Rated 94V-0  
Screw: Steel, Zinc Plated & Clear Chromate (captivated)

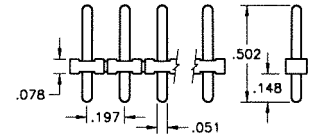
**ELECTRICAL**  
Dielectric Strength: 2500V  
Insulation Breakdown: 1500V AC/min.  
Rated voltage: 250V

**MECHANICAL**  
Operating Temp: 22°F to 248°F (-30°C to 120°C)  
Peak Temp: +393°F (+200°C)

5mm SPACING			
CAT. NO.	POSITIONS	A	CURRENT RATING
8725	2	.394	10 Amps
8726	3	.591	10 Amps



Recommended Mtg. Hole Size: .059



CAT. NO. 8727

## SCREWLESS - PUSH BUTTON TYPE

### SPECIFICATIONS

**MATERIAL**  
Terminal: Brass, Tin Plate  
Contact: Stainless Steel  
Housing: Blue Nylon 6/6, UL Rated 94V-0

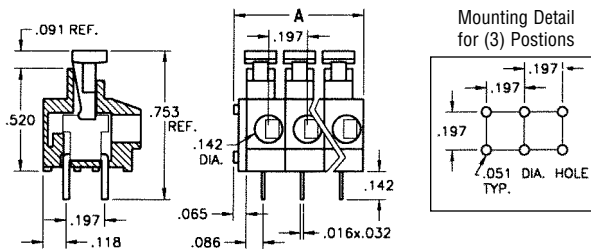
**ELECTRICAL**  
Current Rating: 10 Amps  
Dielectric Strength: 2500V  
Insulation Breakdown: 1500VAC/min.

**MECHANICAL**  
Operating Temp: 22°F to 248°F (-30°C to 120°C)  
Peak Temp: +392°F (+200°C)

5mm SPACING		
CAT. NO.	POSITIONS	A DIM.
8728	2	.459
8729	3	.656

Particularly useful when quick reliable connections are required or when temporary connections are needed, such as on test sets and bread boards. They may be interlocked to achieve a maximum of 24 positions.

- Available with two or three terminal positions
- Mounts easily in predrilled or stamped holes
- Suited for both solid and stranded wire
- Accepts #20-18 AWG wire\*
- Stainless Steel spring assures good contact
- Quick reliable connection



Mounting Detail for (3) Positions

\*Recommended wire strip length: .300

### MODULAR INTERLOCKS

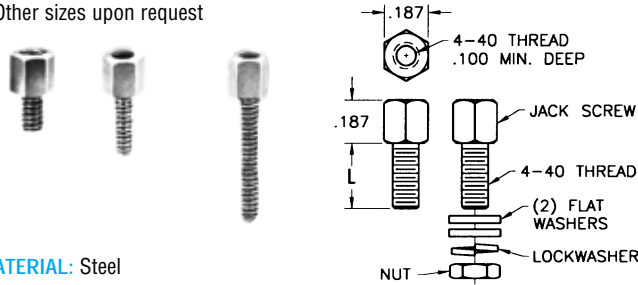


#### Horizontal wire entry



## JACK SCREWS

- Equivalent to AMP, CANNON & TRW Jack Screws
- "D" subminiature connector mounting screw
- Other sizes upon request

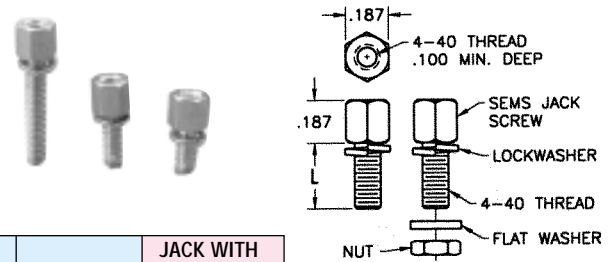


**MATERIAL:** Steel

JACK ONLY		"L" DIM.	JACK WITH HARDWARE (Supplied Unassembled in Bulk)	
ZINC PLATE & GOLD IRIDITE	ZINC PLATE & CLEAR CHROMATE		ZINC PLATE & GOLD IRIDITE	ZINC PLATE & CLEAR CHROMATE
7228	7228-5	.250	7229	7229-5
7230	7230-5	.312	7231	7231-5
7232	7232-5	.625	7233	7233-5

## SEMS JACK SCREWS

- "D" subminiature connector mounting screw
- Captivated helical spring lockwasher, simplifies use
- Flat washer and nut supplied unassembled



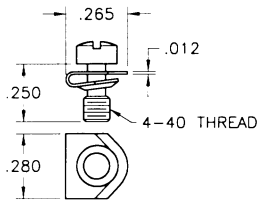
"L" DIM.	JACK ONLY CAT. NO.	JACK WITH HARDWARE (Supplied Unassembled in Bulk)
.285	7235	7236
.347	7237	7238
.660	7239	7240

**MATERIAL:** Steel, Zinc Plate & Clear Chromate

## MOUNTING HARDWARE

Our assortment of standard clips and washers offer the needed flexibility to secure your connectors in the manner best suited to your instrumentation and design.

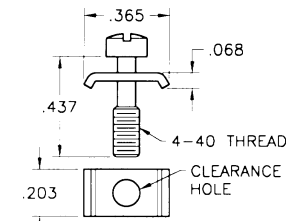
### "U" CLIP



**CAT. NO. 2062**

**MATERIAL:** Clip & Screw: Steel, Zinc Plate & Gold Iridite

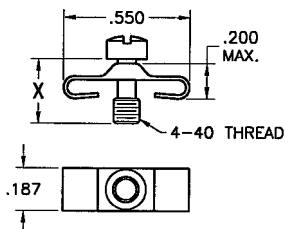
### SADDLE WASHER



**CAT. NO. 2063**

**MATERIAL:** Clip & Screw: Steel, Zinc Plate & Gold Iridite

### "BOW TIE" RETAINING CLIP



CAT. NO.	X
2060	4-40 x 1/4
2061	4-40 x 9/32

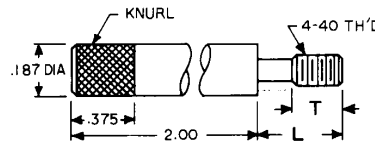
**MATERIAL:** Clip & Screw: Steel, Zinc Plate & Gold Iridite

## TURNABLE JACK SCREWS

Turnable jack screws, available with or without screwdriver slot make mating and disconnecting computer connectors quick and easy.

### DIRECT ACCESS

AVAILABLE WITH OR WITHOUT SCREWDRIVER SLOT.

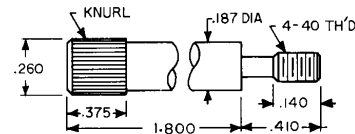


"T" DIM.	"L" DIM.	CAT. NO. WITHOUT SLOT	CAT. NO. WITH SLOT
.125	.250	2064	2065
.250	.437	2066	2067

**MATERIAL:** Steel, Black Oxide

### STRAIGHT KNURL

AVAILABLE WITH OR WITHOUT SCREWDRIVER SLOT.

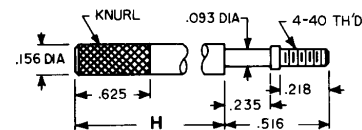


CAT. NO. WITHOUT SLOT	CAT. NO. WITH SLOT
2072	2073

**MATERIAL:** Steel, Zinc Plate & Clear Chromate

### SLIM LINE

AVAILABLE WITH OR WITHOUT SCREWDRIVER SLOT.



"H" DIM.	CAT. NO. WITHOUT SLOT	CAT. NO. WITH SLOT
1.250	2068	2069
1.750	2070	2071

**MATERIAL:** Steel, Nickel Plate





Designers' Choice

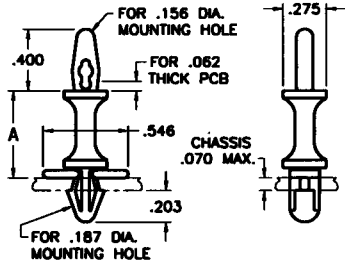
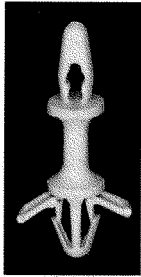
# INSULATED PC SPACERS/SUPPORTS

- Easy snap-in assembly
- Designed for .062 thick PC boards and chassis
- Releasable for repairs

- Strong dependable grip
  - No tools required for installation
- MATERIAL:** Nylon, UL Rated 94V-0

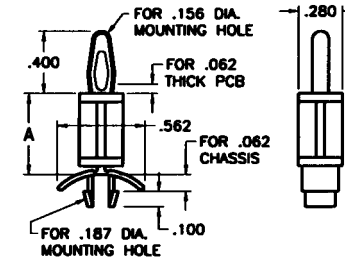
## PC TENSION-FIT SUPPORTS

One end locks into chassis, the other end tension-fits into the PC board



CAT. NO.	"A" DIM.
1927A	.250
1928A	.375
1929A	.500
1930A	.625
1931A	.750
1932A	.875
1933A	1.000

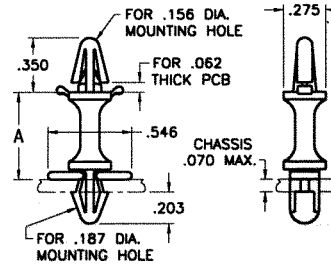
One end locks into chassis, the other end tension-fits into the PC board



CAT. NO.	"A" DIM.
8800	.187
8801	.250
8802	.375
8803	.500
8804	.625
8805	.750
8806	.875

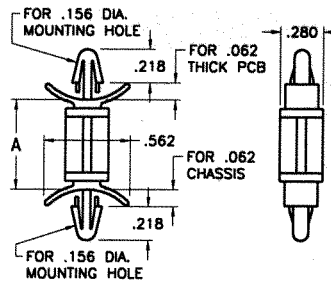
## PC LOCK-IN SUPPORTS

One end locks into chassis, the other end locks into the PC board



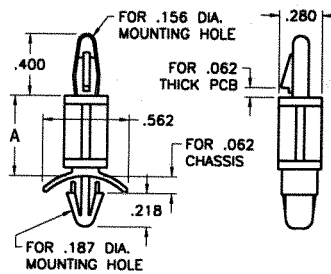
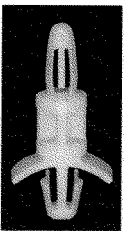
CAT. NO.	"A" DIM.
1927B	.250
1928B	.375
1929B	.500
1930B	.625
1931B	.750
1932B	.875
1933B	1.000

One end locks into chassis, the other end locks into the PC board



CAT. NO.	"A" DIM.
8815	.187
8816	.250
8817	.375
8818	.500
8819	.625
8820	.750
8821	.875

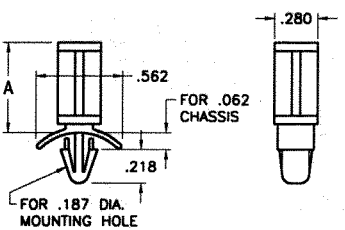
One end locks into chassis, the other end locks into the PC board with easy release lever



CAT. NO.	"A" DIM.
8807	.187
8808	.250
8809	.375
8810	.500
8811	.625
8812	.750
8813	.875
8814	1.000

## PC SPACER SUPPORTS

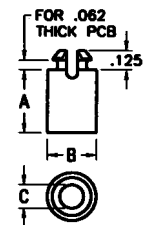
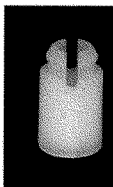
One end locks into chassis, other end supports the PC board



CAT. NO.	"A" DIM.
8822	.187
8823	.250
8824	.375
8825	.500
8826	.625
8827	.750
8828	.875

## STACKING SPACERS

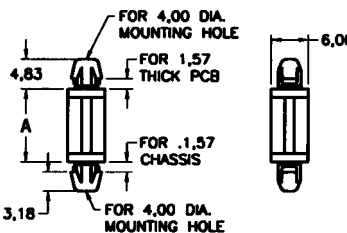
Self-aligning and self retaining. Designed for stacking multiple levels of PC boards. Available for use with #4, #6 & #8 size screws.



CAT. NO.	"A" DIM.	"B" DIM.	"C" DIM.	MTG HOLE	SCREW SIZE
8829	.125	.260	.125	.187	#4
8830	.187	.260	.125	.187	
8831	.250	.260	.125	.187	
8832	.375	.260	.125	.187	
8833	.500	.260	.125	.187	
8834	.625	.260	.125	.187	#6
8835	.250	.312	.153	.234	
8836	.375	.312	.153	.234	
8837	.500	.312	.153	.234	
8838	.625	.312	.153	.234	
8839	.250	.312	.169	.234	#8
8840	.375	.312	.169	.234	
8841	.500	.312	.169	.234	
8842	.625	.312	.169	.234	

## METRIC PC LOCK-IN SUPPORTS

One end locks into chassis, the other end locks into the PC board



CAT. NO.	"A" DIM.
8843	3mm
8844	4mm
8845	6mm
8846	8mm
8847	10mm
8848	12mm
8849	14mm
8850	16mm
8851	18mm

**MATERIAL:** Nylon, UL Rated 94V-2

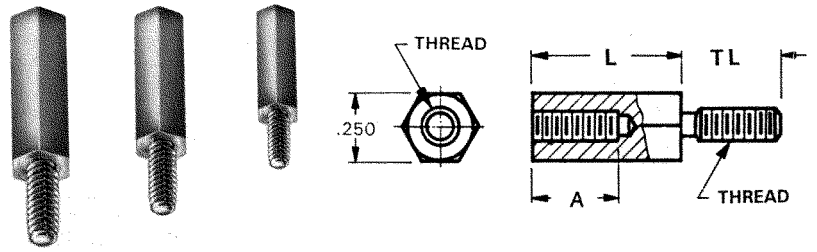
# HEX MALE/FEMALE STANDOFFS

Designers' Choice



## MALE/FEMALE .250 HEX THREADED STANDOFFS

CHOICE OF: Brass:ASTM-B16  
 Plating: Nickel (QQ-N-290)  
 Aluminum: QQ-Q-225/3  
 Plating: Clear Iridite (Mil-C-5541)  
 Stainless Steel: ASTM A581/A582



THREAD SIZE	TL EXTERNAL	A INTERNAL
4-40	3/16 (.187)	1/4 (.250)
6-32	1/4 (.250)	3/8 (.375)
8-32	3/8 (.375)	3/8 (.375)

4-40 THREAD			
LENGTH INCHES "L"	STAINLESS STEEL CAT. NO.	BRASS CAT. NO.	ALUMINUM CAT. NO.
1/4 (.250)**	8712	8713	8714
3/8 (.375)**	2087	7200	8400
1/2 (.500)	2088	1944	8401
5/8 (.625)	2089	1945	8402
3/4 (.750)	2090	1946	8403
7/8 (.875)	2091	7201	8404
1 (1.000)	2092	1947	8405
1-1/8 (1.125)	2093	7202	8406
1-1/4 (1.250)	2094	1948	8407
1-3/8 (1.375)	2095	1949	8408
1-1/2 (1.500)	2096	1950	8409
1-5/8 (1.625)	2097	7203	8410
1-3/4 (1.750)	2098	7205	8411
2 (2.000)	2099	1951	8412

6-32 THREAD			
LENGTH INCHES "L"	STAINLESS STEEL CAT. NO.	BRASS CAT. NO.	ALUMINUM CAT. NO.
1/4 (.250)**	8715	8716	8717
3/8 (.375)**	2119	7210	8413
1/2 (.500)	2120	1952	8414
5/8 (.625)	2121	1953	8415
3/4 (.750)	2122	1954	8416
7/8 (.875)	2123	7211	8417
1 (1.000)	2124	1644	8418
1-1/8 (1.125)	2125	7212	8419
1-1/4 (1.250)	2126	1955	8420
1-3/8 (1.375)	2127	1956	8421
1-1/2 (1.500)	2128	1645	8422
1-5/8 (1.625)	2129	7214	8423
1-3/4 (1.750)	2130	7215	8424
2 (2.000)	2131	1646	8425

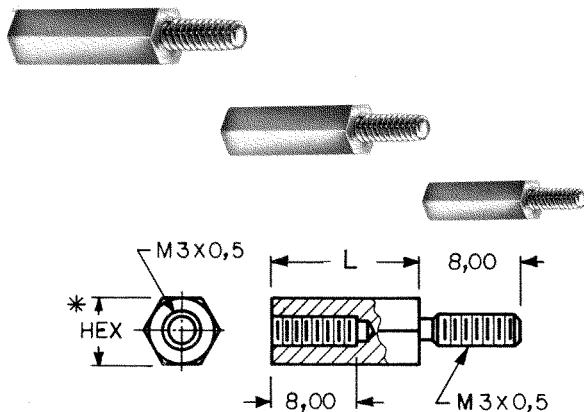
8-32 THREAD			
LENGTH INCHES "L"	STAINLESS STEEL CAT. NO.	BRASS CAT. NO.	ALUMINUM CAT. NO.
—	—	—	—
3/8 (.375)**	2149	7220	8426
1/2 (.500)	2150	1957	8427
5/8 (.625)	2151	1958	8428
3/4 (.750)	2152	1959	8429
7/8 (.875)	2153	7221	8430
1 (1.000)	2154	1960	8431
1-1/8 (1.125)	2155	7222	8432
1-1/4 (1.250)	2156	1961	8433
1-3/8 (1.375)	2157	1962	8434
1-1/2 (1.500)	2158	1963	8435
1-5/8 (1.625)	2159	7224	8436
1-3/4 (1.750)	2160	7225	8437
2 (2.000)	2161	1964	8438

\*\* Internal Thread .250 Deep      \*\*\* Internal Thread .130/.150 Deep

## METRIC MALE/FEMALE

HEX THREADED STANDOFFS (5mm & 5.5mm)  
 A comprehensive range of precision made metric male/female spacers.

MATERIAL: Brass, Nickel Plate.



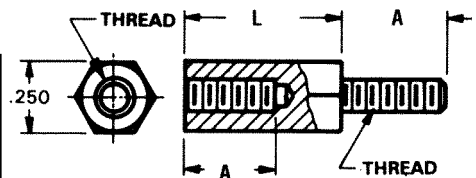
5mm HEX*	
CAT. NO.	"L"
4313	10mm
4314	12mm
4315	15mm
4316	18mm
4317	20mm
4318	25mm

5.5mm HEX*	
CAT. NO.	"L"
4319	10mm
4320	12mm
4321	15mm
4322	18mm
4323	20mm
4324	25mm

## NYLON MALE/FEMALE .250 HEX

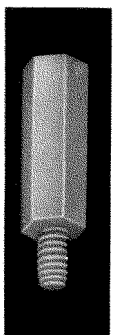
MATERIAL: Nylon 6/6

THREAD SIZE	A
4-40	3/16 (.187)
6-32	1/4 (.250)
8-32	3/8 (.375)



LENGTH INCHES "L"	4-40 THREAD CAT. NO.	6-32 THREAD CAT. NO.	8-32 THREAD CAT. NO.
1/4 (.250)	4800	4814*	4828*
3/8 (.375)	4801	4815	4829**
1/2 (.500)	4802	4816	4830
5/8 (.625)	4803	4817	4831
3/4 (.750)	4804	4818	4832
7/8 (.875)	4805	4819	4833
1 (1.000)	4806	4820	4834
1-1/8 (1.125)	4807	4821	4835
1-1/4 (1.250)	4808	4822	4836
1-3/8 (1.375)	4809	4823	4837
1-1/2 (1.500)	4810	4824	4838
1-5/8 (1.625)	4811	4825	4839
1-3/4 (1.750)	4812	4826	4840
2 (2.000)	4813	4827	4841

\* Internal Thread .130/.150 Deep      \*\* Internal Thread .250 Deep



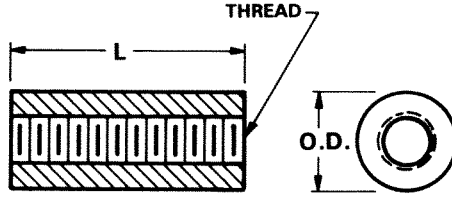


Designers' Choice

# THREADED STANDOFFS



HEX



ROUND



**MATERIAL**

Brass: per ASTM-B16  
Aluminum: QQ-A-225/3, Alloy 2011-T3

**PLATING**

Zinc: ASTM B633  
Iridite Finish: MIL-C-5541

THREAD	O.D.	LENGTH	ALUMINUM IRIDITE FINISH		BRASS ZINC PLATE	
			HEX CAT. NO.	ROUND CAT. NO.	HEX CAT. NO.	ROUND CAT. NO.
2-56	.156 (5/32)	3/16 (.187)	1797A	1801A	1798A	1802A
		1/4 (.250)	1797B	1801B	1798B	1802B
		5/16 (.312)	1797C	1801C	1798C	1802C
		3/8 (.375)	1797D	1801D	1798D	1802D
4-40	.187 (3/16)	1/4 (.250)	1891	2025	1450	1547
		3/8 (.375)	1892	2026	1803	1864
		1/2 (.500)	1893	2027	1656	1657
		5/8 (.625)	1894	2028	1804	1865
		3/4 (.750)	1895	2029	1656A	1657A
		7/8 (.875)	1896	2030	1805	1866
		1 (1.000)	1897	2031	1656B	1657B
4-40	.250 (1/4)	1/4 (.250)	2201	3478	1450A	1547A
		3/8 (.375)	2202	3479	1450B	1547B
		1/2 (.500)	2203	3480	1450C	1547C
		5/8 (.625)	1808	1839	1829	1867
		3/4 (.750)	2204	3481	1450D	1547D
		7/8 (.875)	1809	1846	1830	1876
		1 (1.000)	2205	3482	1450E	1547E
		1-1/2 (1.500)	2206	3483	1831	1877
		2 (2.000)	2207	3484	1832	1878
		2 (2.000)	2207	3484	1451A	1548A
6-32	.250 (1/4)	1/4 (.250)	2208	3485	1451A	1548A
		3/8 (.375)	2209	3486	1451B	1548B
		1/2 (.500)	2210	3487	1451C	1548C
		5/8 (.625)	1813	1847	1451D	1548D
		3/4 (.750)	2211	3488	1451E	1548E
		7/8 (.875)	1816	1848	1833	1879
		1 (1.000)	2212	3489	1635	1548F
		1-1/4 (1.250)	1818	1853	1636	1881
		1-1/2 (1.500)	2213	3490	1637	1882
		1-3/4 (1.750)	1819	1855	1638	1883
		2 (2.000)	2214	3491	1639	1884
		2-1/4 (2.250)	1820	1856	1642	1885
		2-1/2 (2.500)	1825	1857	1643	1886
8-32	.250 (1/4)	1/4 (.250)	2215	3492	1474A	1692A
		3/8 (.375)	2216	3493	1474B	1692B
		1/2 (.500)	2217	3494	1474C	1692C
		5/8 (.625)	1827	1858	1834	1887
		3/4 (.750)	2218	3495	1474D	1692D
		7/8 (.875)	1828	1859	1836	1888
		1 (1.000)	2219	3496	1474E	1692E
		1-1/2 (1.500)	2220	3497	1837	1889
		2 (2.000)	2221	3498	1838	1899
8-32	.375 (3/8)	3/8 (.375)	1926A	2315A	1452A	1549A
		1/2 (.500)	1926B	2315B	1452B	1549B
		5/8 (.625)	1926C	2315C	1452C	1549C
		3/4 (.750)	1926D	2315D	1452D	1549D
		1 (1.000)	1926E	2315E	1452E	1549E

NOTE: Spacers over 1.000 long are tapped .375 deep each end.

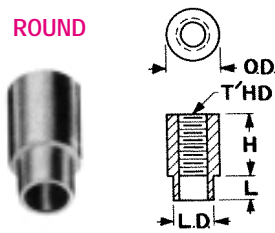
# SWAGE/FORCE FIT STANDOFFS

Designers' Choice

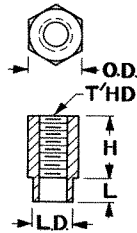


## SWAGE THREADED STANDOFFS

ROUND



HEX



**SPECIFICATIONS:**

Brass: per ASTM-B16

Nickel Plate: QQ-N-290

ROUND CAT. NO.	H Height Above Panel	L Shank Length	For Panel Thickness	LD Shank Diameter	HEX CAT. NO.
<b>2-56 THREAD × .156 O.D. (5/32")</b>					
1589-2	.125	.109	1/16	.125	1731-2
1590-2	.187	.109	1/16	.125	1734-2
1591-2	.250	.109	1/16	.125	1740-2
1596-2	.375	.109	1/16	.125	1743-2
<b>4-40 THREAD × .187 O.D. (3/16")</b>					
2260-2	.125	.109	1/16	.139	2270-2
2261-2	.187	.109	1/16	.139	2271-2
2262-2	.250	.109	1/16	.139	2272-2
2263-2	.375	.109	1/16	.139	2273-2
2264-2	.500	.109	1/16	.139	2274-2
<b>4-40 THREAD × .250 O.D. (1/4")</b>					
1560 A	.125	.109	1/16	.187	1653-2
1560 F	.125	.140	3/32	.187	1653-3
1790-2	.187	.109	1/16	.187	1746-2
1790-3	.187	.140	3/32	.187	1746-3
1650-2	.250	.109	1/16	.187	1627-2
1650-3	.250	.140	3/32	.187	1627-3
1651-2	.375	.109	1/16	.187	1628-2
1651-3	.375	.140	3/32	.187	1628-3
1623-2	.500	.109	1/16	.187	1629-2
1623-3	.500	.140	3/32	.187	1629-3
1624-2	.625	.109	1/16	.187	1654-2
1624-3	.625	.140	3/32	.187	1654-3
1625-2	.750	.109	1/16	.187	1655-2
1625-3	.750	.140	3/32	.187	1655-3
1792-2	.875	.109	1/16	.187	1749-2
1792-3	.875	.140	3/32	.187	1749-3
1652-2	1.000	.109	1/16	.187	1630-2
1652-3	1.000	.140	3/32	.187	1630-3
<b>6-32 THREAD × .250 O.D. (1/4")</b>					
1560 B	.125	.109	1/16	.187	1620-2
1560 C	.125	.140	3/32	.187	1620-3
1612-2	.187	.109	1/16	.187	1752-2
1612-3	.187	.140	3/32	.187	1752-3
1546	.250	.109	1/16	.187	1621-2
1546 B	.250	.140	3/32	.187	1621-3
1546 D	.250	.171	1/8	.187	1621-4
1561 B	.375	.109	1/16	.187	1622-2
1561 C	.375	.140	3/32	.187	1622-3
1561 D	.375	.171	1/8	.187	1622-4
1604-2	.500	.109	1/16	.187	1758-2
1604-3	.500	.140	3/32	.187	1758-3
1604-4	.500	.171	1/8	.187	1758-4
1605-2	.625	.109	1/16	.187	1759-2
1605-3	.625	.140	3/32	.187	1759-3
1608-2	.750	.109	1/16	.187	1761-2
1608-3	.750	.140	3/32	.187	1761-3
1796-2	.875	.109	1/16	.187	1775-2
1796-3	.875	.140	3/32	.187	1775-3
1609-2	1.000	.109	1/16	.187	1784-2
1609-3	1.000	.140	3/32	.187	1784-3

**STAKING TOOLS FOR SWAGE STANDOFFS**

Precision made tools-heat treated and plater. Will give your job the professional appearance. Set of tools consists of: Top Staking Tool and Anvil.



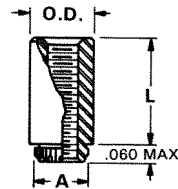
CAT.NO.TL-19	For Bushing 5/32 OD with 2-56 Thd.
CAT.NO.TL-20	For Bushing 1/4 OD with 4-40 Thd.
CAT.NO.TL-21	For Bushing 1/4 OD with 6-32 Thd.

A broaching-type fastener/standoff for installation in panels and circuit boards .060 inch and thicker made of plastic and other non-ductile materials. Available threaded or with clearance holes. Easy to install, pressed into punched or drilled holes.

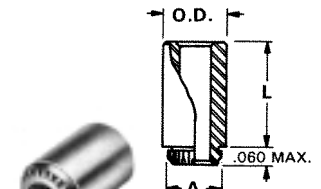
**MATERIALS:** Stainless Steel  
per ASTM-A581/A582

Mounting Holes:  
.147 hole for 2-56.  
.166 hole for 4-40.  
.213 hole for 6-32.

Tolerance on Mounting Holes:  
+.003/- .000.



Threaded



Clear Hole

THREADED				
CAT. NO.	THREAD	"L" LENGTH	O.D.	"A"
4860	2-56	.065	.219	.165
4861	4-40	.065	.219	.184
4862	4-40	.125	.219	.184
4863	4-40	.250	.219	.184
4864	4-40	.375	.219	.184
*4865	4-40	.500	.219	.184
4866	6-32	.065	.281	.231
4867	6-32	.125	.281	.231
4868	6-32	.250	.281	.231
4869	6-32	.375	.281	.231
*4870	6-32	.500	.281	.231

\*Thread depth .375

CLEAR HOLE				
CAT. NO.	I.D.	LENGTH	O.D.	"A"
4850	#4 (.116)	.065	.219	.184
4851	#4 (.116)	.125	.219	.184
4852	#4 (.116)	.250	.219	.184
4853	#4 (.116)	.375	.219	.184
4854	#4 (.116)	.500	.219	.184
4855	#6 (.143)	.065	.281	.231
4856	#6 (.143)	.125	.281	.231
4857	#6 (.143)	.250	.281	.231
4858	#6 (.143)	.375	.281	.231
4859	#6 (.143)	.500	.281	.231

## CUSTOM SPACERS & STANDOFFS

Keystone is fully integrated to meet your total design & production needs.

Manufacturing custom designs & modifications of standard items is our specialty.

Quotations on special spacers & standoffs furnished promptly upon receipt of sample, sketch, print or CAD drawings.



Designers' Choice

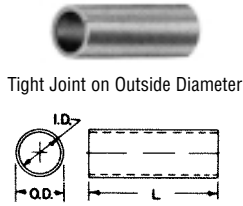
# SPACERS & STANDOFFS

## ALUMINUM ECONOMY SPACERS

• PRECISION FORMED • NO BURRS

Made of flat strip aluminum and rolled on precision equipment. Assures maximum bearing surface, square ends.

Aluminum: Per 5052-H34 per QQ-A-250/8b



Description and Tol.

SPACER FOR	I.D. ±.005	O.D. — ±.007
#4	.125	.167
#6	.151	.193
#8	.178	.232

L Length	#4 Screw CAT. NO.	#6 Screw CAT. NO.	#8 Screw CAT. NO.
.187	397	—	—
.250	398	405	412
.312	399	406	413
.375	400	407	414
.437	401	408	415
.500	402	409	416
.625	403	410	417
.750	418	425	432
.875	419	426	433
1.000	420	427	434
1.250	421	428	435
1.500	422	429	436
1.750	—	430	437
2.000	—	—	438

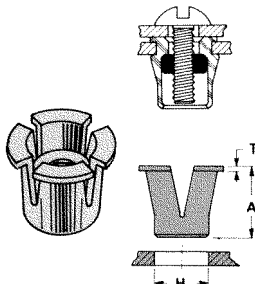
## BLIND CAPTIVE NUTS — PRESS FIT

MOUNT CHASSIS, PANELS, HEAT SINKS, SOCKETS

**MATERIAL:** Molded Nylon with Brass threaded insert.

- EASY ASSEMBLY
- DAMPENS VIBRATION
- ELIMINATES INSULATING WASHER
- HI-DIELECTRIC STRENGTH

A unique reusable fastener made of NYLON which contains a threaded brass nut. Finger pressure or light tap seals it in a pre-drilled hole. The nut is drawn up causing a Nylon bulge behind the workpiece. Screw may be removed or replaced.

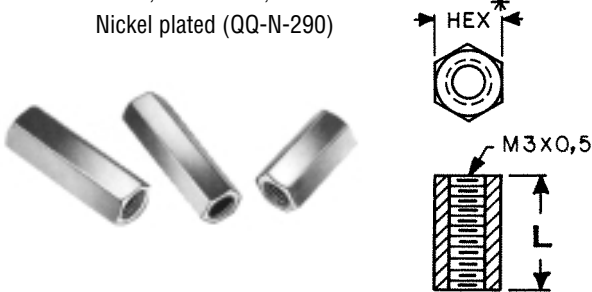


CAT. NO.	THREAD	"H" HOLE SIZE REQ/D.	IDEAL SHEET THICKNESS	A	T
4341	4-40	.250	.047	.312	.030
4342	6-32	.312	.078	.375	.030
4343	8-32	.406	.093	.500	.030

## METRIC HEX THREADED STANDOFFS

A comprehensive range of precision made metric hex spacers.

**MATERIAL:** Brass, ASTM-B16, Nickel plated (QQ-N-290)



5mm HEX*	
CAT. NO.	"L"
4390	5mm
4391	10mm
4392	15mm
4393	20mm
4394	25mm

5.5mm HEX*	
CAT. NO.	"L"
4395	5mm
4396	10mm
4397	15mm
4398	20mm
4399	25mm

## ROUND CLEAR SPACERS

BRASS OR ALUMINUM

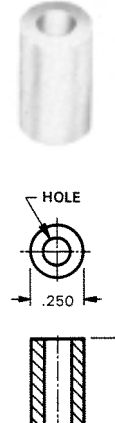
**MATERIALS:**

Brass: ASTM-B16, Nickel plate (QQ-N-290)  
Aluminum: Iridite Finish (MIL-C-5541)

L LENGTH	HOLE	BRASS	ALUMINUM
		CAT. NO.	CAT. NO.
.125	.120	1909	2036
.250	.120	1454A	3457
.375	.120	1454B	3458
.500	.120	1454C	3459
.625	.120	1919	2314
.750	.120	1454D	3460
.875	.120	1920	3402
1.000	.120	1545E	3461
1.500	.120	1924	3462
2.000	.120	1925	3463
.125	.140	1934	3403
.250	.140	1457A	3464
.375	.140	1457B	3465
.500	.140	1457C	3466
.625	.140	1935	3429
.750	.140	1957D	3467
.875	.140	1936	3438
1.000	.140	1457E	3468
1.500	.140	1937	3469
2.000	.140	1938	3470
.125	.171	1942	4258
.250	.171	1480	3471
.375	.171	1481	3472
.500	.171	1482	3473
.625	.171	2032	4259
.750	.171	1483	3474
.875	.171	2033	4260
1.000	.171	1484	3475
1.500	.171	2034	3476
2.000	.171	2035	3477

CLEARANCE HOLE:

- .120 for #4 screw
- .140 for #6 screw
- .171 for #8 screw



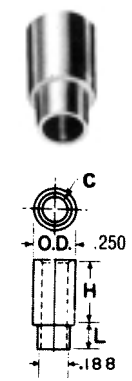
## ROUND SWAGE CLEAR SPACERS

**MATERIAL:** Brass, ASTM-B16, Nickel plate (QQ-N-290)

CLEARANCE HOLE:

- .120 for #4 screw
- .140 for #6 screw

CAT. NO.	H HEIGHT	FOR PANEL THICKNESS	C HOLE	L
5060-2	.250	1/16	.120	.109
5060-3	.250	3/32	.120	.141
5061-2	.375	1/16	.120	.109
5061-3	.375	3/32	.120	.141
5062-2	.500	1/16	.120	.109
5062-3	.500	3/32	.120	.141
5063-2	.250	1/16	.140	.109
5063-3	.250	3/32	.140	.141
5064-2	.375	1/16	.140	.109
5064-3	.375	3/32	.140	.141
5065-2	.500	1/16	.140	.109
5065-3	.500	3/32	.140	.141



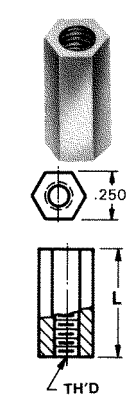
## HEX STAINLESS THREADED STANDOFFS

**MATERIAL:** Stainless Steel per ASTM-A581/A582, Class 303

• Corrosion Resistant

L Length Inches	4-40 Thread CAT. NO.	6-32 Thread CAT. NO.	8-32 Thread CAT. NO.
1/4 (.250)	1921	1922	1923
3/8 (.375)	1921A	1922A	1923A
1/2 (.500)	1921B	1922B	1923B
3/4 (.750)	1921C	1922C	1923C
1 (1.000)	1921D	1922D	1923D
1 1/2 (1.500)	1921E	1922E	1923E
2 (2.000)	1921F	1922F	1923F

- 4-40 thread on 1/2" and over tapped 1/4" each end
- 6-32 & 8-32 thread on 1" and over tapped 3/8" each end



# HINGED STANDOFFS & KITS

Designers' Choice



## HINGED STANDOFFS

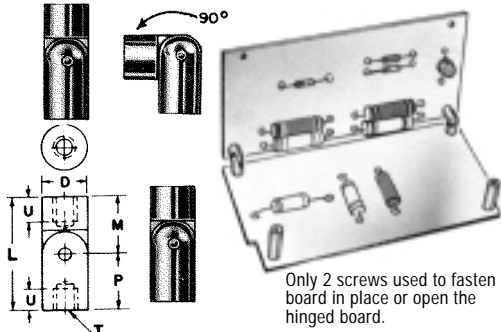
APPLICATIONS UNLIMITED • TIME SAVING • SPACE SAVING  
• INTERCONNECT CIRCUITS OR SERVICES WITHOUT DANGER OF SHORTING

**MATERIAL:**

Brass: per ASTM-B16

Finish: Zinc plate and Gold Iridite

**FEMALE/FEMALE HINGE**



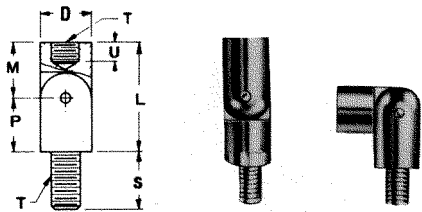
These standoff mount at front of the board.

Only 2 screws used to fasten board in place or open the hinged board.



CAT. NO.	T	D	L	U	M	P
	THREAD	DIA.	LENGTH			
351	4-40	.187	.750	.172	.375	.375
352	4-40	.187	1.000	.250	.375	.625
330	4-40	.187	1.250	.250	.625	.625
353	6-32	.250	.750	.172	.375	.375
354	6-32	.250	1.000	.250	.375	.625
331	6-32	.250	1.250	.250	.625	.625
355	8-32	.250	.750	.172	.375	.375
356	8-32	.250	1.000	.250	.375	.625
332	8-32	.250	1.250	.250	.625	.625

**MALE/FEMALE HINGE**

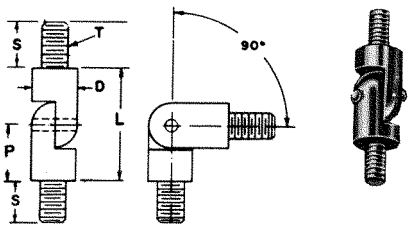


These standoffs mount at front of the board.



CAT. NO.	T	L	D	S	U	P	M
	THREAD	LENGTH	DIA.				
333	4-40	.625	.187	.250	.172	.250	.375
334	4-40	.875	.187	.250	.250	.250	.625
335	6-32	.625	.250	.312	.172	.250	.375
336	6-32	.875	.250	.312	.250	.250	.625
337	8-32	.625	.250	.312	.172	.250	.375
338	8-32	.875	.250	.312	.250	.250	.625

**MALE/MALE HINGE**



These standoffs mount at front of the board.



CAT. NO.	T	L	D	S	P
	THREAD	LENGTH	DIA.		
357	4-40	.500	.187	.250	.250
358	6-32	.500	.250	.312	.250
359	8-32	.500	.250	.312	.250

## SPACER/STANDOFF ORGANIZER



Maintain a neat complete inventory of the most frequently used spacers and standoffs in day-to-day operations. Choice of "8" different kits of the most popular spacers and standoffs. An assortment of various sizes and styles in Brass, Aluminum and Nylon with tapped or thru-hole. Metal cabinet designed to be stacked on one another or wall mounted. Clear plastic drawers labeled for easy identification.

THE FOLLOWING ORGANIZER KITS ARE AVAILABLE FROM STOCK!

**1/4" ROUND THREADED**

**Brass Zinc Plated**  
Assortment of 1500 pcs. In 1/4", 3/8", 1/2", 3/4" and 1" lengths. With thread sizes of 4-40, 6-32 and 8-32. 100 pcs. Of each size complete with cabinet.  
KIT. NO. STR-15

**Aluminum Iridite Finish**  
Assortment of 1500 pcs. In 1/4", 3/8", 1/2", 3/4" and 1" lengths. With thread sizes of 4-40, 6-32 and 8-32. 100 pcs. Of each size complete with cabinet.  
KIT. NO. STR-35

**1/4" HEX THREADED**

**Brass Zinc Plated**  
Assortment of 1500 pcs. In 1/4", 3/8", 1/2", 3/4" and 1" lengths. With thread sizes of 4-40, 6-32 and 8-32. 100 pcs. Of each size complete with cabinet.  
KIT. NO. STH-14

**Aluminum Iridite Finish**  
Assortment of 1500 pcs. In 1/4", 3/8", 1/2", 3/4" and 1" lengths. With thread sizes of 4-40, 6-32 and 8-32. 100 pcs. Of each size complete with cabinet.  
KIT. NO. STH-22

**1/4" ROUND CLEAR**

**Brass Nickel Plated**  
Assortment of 1500 pcs. In 1/4", 3/8", 1/2", 3/4" and 1" lengths. With clearance holes for #4, #6 and #6. 100 pcs. Of each size complete with cabinet.  
KIT. NO. SPR-13

**Aluminum Iridite**  
Assortment of 1500 pcs. In 1/4", 3/8", 1/2", 3/4" and 1" lengths. With clearance holes for #4, #6 and #6. 100 pcs. Of each size complete with cabinet.  
KIT. NO. SPR-34

**1/4" ROUND CLEAR**

**Nylon 6/6**  
Assortment of 1500 pcs. In 1/4", 3/8", 1/2", 3/4" and 1" lengths. With clearance holes for #4, #6 and #6. 100 pcs. Of each size complete with cabinet.  
KIT. NO. SPR-8

**1/4" HEX MALE/FEMALE**

**Brass Nickel Plated**  
Assortment of 750 pcs. In 1/2", 3/4", 1", 1 1/4" and 1 1/2" lengths. With thread sizes of 4-40, 6-32 and 8-32. 50 pcs. Of each size complete with cabinet.  
KIT. NO. STH-19

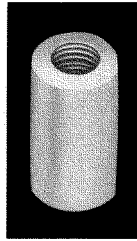
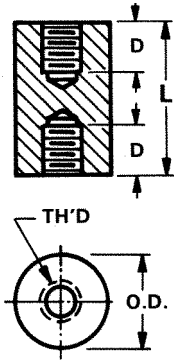


Designers' Choice

# INSULATED SPACERS/STANDOFFS

## CERAMIC STANDOFFS

- Ideal for very high temperature conditions
- Commercial and military types available
- Special sizes available upon request
- Exceptional strength in compression and tension
- Withstands very high voltage without flashover.
- Military types meet MIL-1-010, NL# clearly marked



### COMMERCIAL

CAT. NO.	LENGTH	O.D.	T THREAD	D(2) DEPTH
7710	.250	.250	6-32	THRU
7711	.500	.250	6-32	.156
7712	.375	.375	6-32	.156
7713	.500	.375	6-32	.187
7714	.500	.500	6-32	.140
7715	.750	.500	6-32	.250
7716	1.000	.500	6-32	.375
7717	1.500	.500	6-32	.562
7718	2.500	.500	6-32	.500
7719	2.500	.750	1/4-20	.750
7720	4.000	.750	1/4-20	.750

### MILITARY

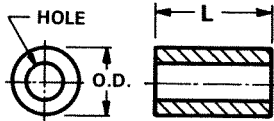
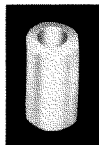
CAT. NO.	LENGTH	O.D.	T THREAD	D(2) DEPTH	NL #
7661	.500	.375	6-32	.156	NL523W01-004
7662	.625	.375	6-32	.250	NL523W01-005
7663	.625	.500	8-32	.187	NL523W02-005
7664	.750	.375	6-32	.250	NL523W01-006
7665	.750	.500	8-32	.250	NL523W02-006
7666	1.000	.375	10-32	.375	NL523W01-008
7667	1.000	.500	8-32	.375	NL523W02-008
7668	1.000	.750	10-32	.375	NL523W03-008
7669	1.250	.375	6-32	.375	NL523W01-010
7670	1.250	.500	8-32	.375	NL523W02-010
7671	1.250	1.000	1/4-20	.437	NL523W04-010
7672	1.500	.375	6-32	.375	NL523W01-012
7673	1.500	.500	8-32	.375	NL523W02-012
7674	1.500	.750	10-32	.375	NL523W03-012
7675	1.500	1.000	1/4-20	.500	NL523W04-012
7676	2.000	.375	6-32	.375	NL523W01-016
7677	2.000	.500	8-32	.375	NL523W02-016
7678	2.000	.750	10-32	.375	NL523W03-016

MATERIAL: Grade L5 Ceramic

## PHENOLIC SPACERS/STANDOFFS

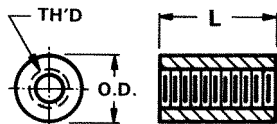
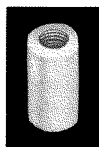
- RESISTS ABRASIONS & CHEMICALS • EXCELLENT DIELECTRIC STRENGTH
- LOW MOISTURE ABSORPTION • GOOD MECHANICAL STRENGTH

MATERIAL: PBE Grade Natural Color Phenolic



CLEAR HOLE SPACERS

"L" Length Inches	.250 O.D. (1/4)			.312 O.D.
	#4 Screw .120 Hole CAT. NO.	#6 Screw .140 Hole CAT. NO.	#8 Screw .171 Hole CAT. NO.	#10 Screw .200 Hole CAT. NO.
1/4 (.250)	360	367	1490	453
3/8 (.375)	361	368	1491	454
1/2 (.500)	362	369	1492	455
3/4 (.750)	363	370	1493	456
1 (1.000)	364	371	1494	457
1 1/2 (1.500)	365	372	374	458
2 (2.000)	366	373	375	459



THREADED STANDOFFS

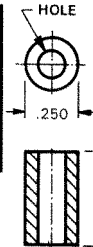
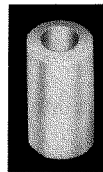
"L" Length Inches	.250 O.D. (1/4)			.312 O.D.	
	4-40 Th'd CAT. NO.	6-32 Th'd CAT. NO.	8-32 Th'd CAT. NO.	8-32 CAT. NO.	10-32 CAT. NO.
1/4 (.250)	376	383	390	460	467
3/8 (.375)	377	384	391	461	468
1/2 (.500)	378	385	392	462	469
3/4 (.750)	379	386	393	463	470
1 (1.000)	380	387	394	464	471
1 1/2 (1.500)	381	388	395	465	472
2 (2.000)	382	389	396	466	473

NOTE: 1 1/2" and 2" spacers are tapped 3/8" deep each end.

## NYLON SPACERS/STANDOFFS

Economical for terminal or printed circuit board supports.

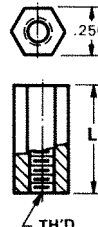
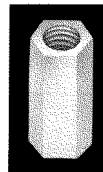
### ROUND THRU-HOLE SPACERS



"L" Length Inches	#4 Screw .120 Hole CAT. NO.	#6 Screw .140 Hole CAT. NO.	#8 Screw .171 Hole CAT. NO.
1/8 (.125)	875	883	891
1/4 (.250)	876	884	892
3/8 (.375)	877	885	893
1/2 (.500)	878	886	894
5/8 (.625)	879	887	895
3/4 (.750)	880	888	896
7/8 (.875)	881	889	897
1 (1.000)	882	890	898

MATERIAL: Nylon 6/6

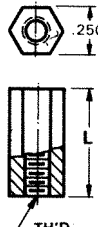
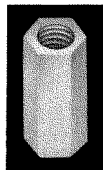
### HEX THREADED STANDOFFS



"L" Length Inches	4-40 Thread CAT. NO.	6-32 Thread CAT. NO.	8-32 Thread CAT. NO.
1/4 (.250)	1902A	1903A	1904A
3/8 (.375)	1902B	1903B	1904B
1/2 (.500)	1902C	1903C	1904C
5/8 (.625)	1902F	1903F	1904F
3/4 (.750)	1902D	1903D	1904D
7/8 (.875)	1902G	1903G	1904G
1 (1.000)	1902E	1903E	1904E

MATERIAL: Nylon 6/6

### FLAME RETARDANT HEX THREADED STANDOFFS



"L" Length Inches	4-40 Thread CAT. NO.	6-32 Thread CAT. NO.	8-32 Thread CAT. NO.
1/4 (.250)	8440A	8441A	8442A
3/8 (.375)	8440B	8441B	8442B
1/2 (.500)	8440C	8441C	8442C
5/8 (.625)	8440D	8441D	8442D
3/4 (.750)	8440E	8441E	8442E
7/8 (.875)	8440F	8441F	8442F
1 (1.000)	8440G	8441G	8442G

MATERIAL: Nylon 6/6







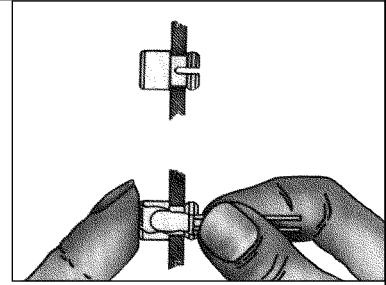
Designers' Choice

# LED LENS CAPS & HOLDERS

## LED LENS CAPS



FOR T-1 AND T-1 3/4



Designed for use with T-1 or T-1 3/4 LEDs, these Lens Caps are available in round or square configurations. They snap-mount through the front panel for easy, light-finger pressure, installation. The LED is inserted into the cap from behind the panel and held securely in place.

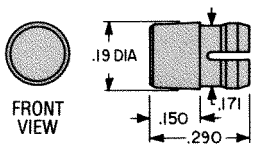
The Lens Cap protects the LED from physical damage while guarding the components from electrostatic discharge (ESD), up to 16KV. More economical

than indicator light assemblies, the caps feature striated lines and fresnel rings which permit up to 180° viewing angles with either diffused or non-diffused LED's. They provide exceptionally high contrast and visibility.

**MATERIAL:** Polycarbonate  
Available in Red, Green, Yellow and Clear.

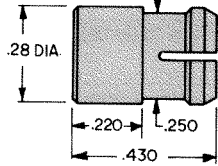
### ROUND CAPS

Fig. 1



Standard Height

Fig. 2



Low Profile

Fig. 3

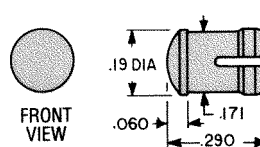
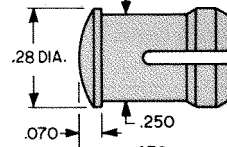


Fig. 4

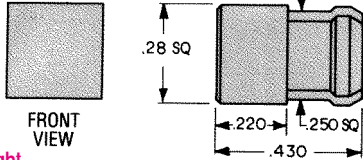


CAT. NO.	FIG. NO.	LED SIZE	COLOR	MTG. HOLE SIZE	MIN. MTG. CENTERS	PANEL THICKNESS
8650	1	T1	RED	.171	.250	.031/.062
8651	1	T1	GREEN	.171	.250	.031/.062
8652	1	T1	YELLOW	.171	.250	.031/.062
8653	1	T1	CLEAR	.171	.250	.031/.062
8662	2	T1 3/4	RED	.250	.375	.062/.125
8663	2	T1 3/4	GREEN	.250	.375	.062/.125
8664	2	T1 3/4	YELLOW	.250	.375	.062/.125
8665	2	T1 3/4	CLEAR	.250	.375	.062/.125

CAT. NO.	FIG. NO.	LED SIZE	COLOR	MTG. HOLE SIZE	MIN. MTG. CENTERS	PANEL THICKNESS
8656	3	T1	RED	.171	.250	.062/.125
8657	3	T1	GREEN	.171	.250	.062/.125
8658	3	T1	YELLOW	.171	.250	.062/.125
8659	3	T1	CLEAR	.171	.250	.062/.125
8668	4	T1 3/4	RED	.250	.375	.031/.250*
8669	4	T1 3/4	GREEN	.250	.375	.031/.250*
8670	4	T1 3/4	YELLOW	.250	.375	.031/.250*
8671	4	T1 3/4	CLEAR	.250	.375	.031/.250*

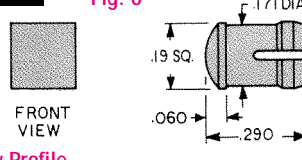
### SQUARE CAPS

Fig. 5



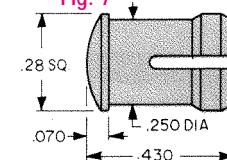
Standard Height

Fig. 6



Low Profile

Fig. 7

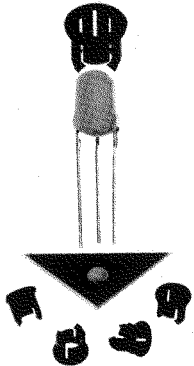


CAT. NO.	FIG. NO.	LED SIZE	COLOR	MTG. HOLE SIZE	MIN. MTG. CENTERS	PANEL THICKNESS
8680	5	T1 3/4	RED	.250 Sq.	.375	.062/.125
8681	5	T1 3/4	GREEN	.250 Sq.	.375	.062/.125
8682	5	T1 3/4	YELLOW	.250 Sq.	.375	.062/.125
8683	5	T1 3/4	CLEAR	.250 Sq.	.375	.062/.125

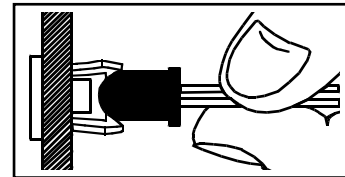
CAT. NO.	FIG. NO.	LED SIZE	COLOR	MTG. HOLE SIZE	MIN. MTG. CENTERS	PANEL THICKNESS
8674	6	T1	RED	.171	.250	.062/.125
8675	6	T1	GREEN	.171	.250	.062/.125
8676	6	T1	YELLOW	.171	.250	.062/.125
8677	6	T1	CLEAR	.171	.250	.062/.125
8686	7	T1 3/4	RED	.250	.375	.031/.250*
8687	7	T1 3/4	GREEN	.250	.375	.031/.250*
8688	7	T1 3/4	YELLOW	.250	.375	.031/.250*
8689	7	T1 3/4	CLEAR	.250	.375	.031/.250*

\*When mounting T-1 3/4 Low Profile Caps (Fig. 4 or Fig. 7) in panels .125 thick or less a spacer must be used. Spacer CAT. NO. 8692 MATERIAL: White Nylon 3.8 O.D. x 1/4 I.D. x 1/8 Lg.

## "SNAP-IN" T-1 & T-1<sup>3</sup>/<sub>4</sub> LED HOLDERS

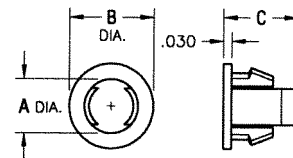


Designed for use with T-1 & T-1 3/4 LED's in .060 - .070 thick panels. The holder snaps into the front panel with easy, light-finger pressure. The LED snaps into the holder from behind the panel and is held securely in place.



**MATERIAL:** Nylon 6/6, Black

CAT. NO.	LED SIZE	A	B	C	MTG. HOLE SIZE
8309	T-1	.114	.232	.188	.171
8310	T-1 3/4	.200	.315	.274	.250



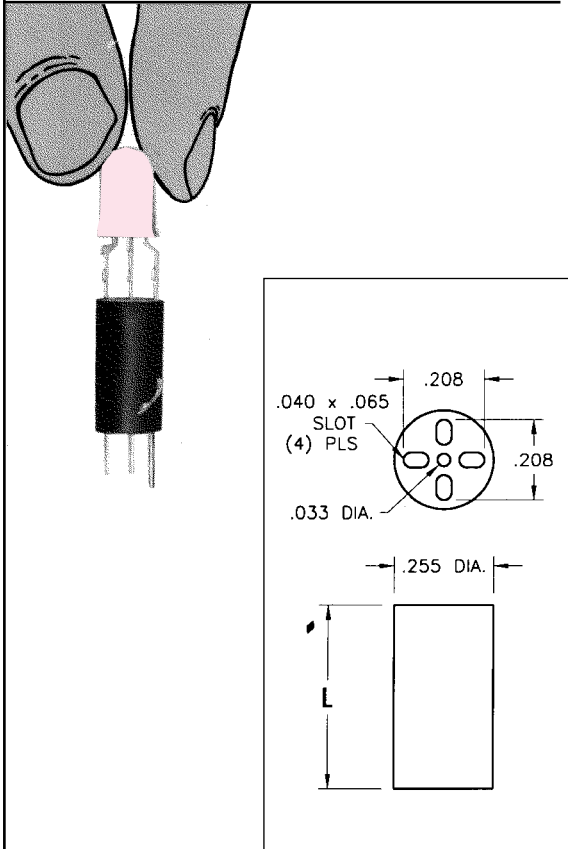
# LED SPACER MOUNTS

Designers' Choice



## "UNIVERSAL" FOR TRI-LEAD T-1 & T-1 3/4

- Unique design separates leads and retains Tri-Lead (and/or Bi-Lead) components
- Designed for PC board mounting of Tri-Lead (and/or Bi-Lead) T-1 and T-1<sup>3/4</sup> LEDs
- Provides height control, lead retention and stability
- Also suitable for mounting lamps, resistors, transistors, diodes, capacitors, etc.



**MATERIAL:** Black PVC, UL Rated 94V-0

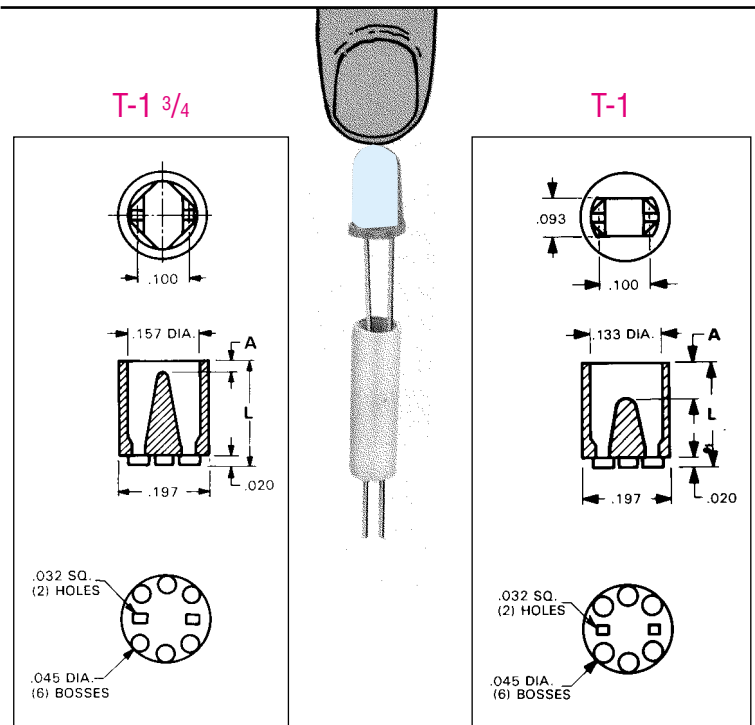
T-1 <sup>3/4</sup> and T-1			
CAT. NO.	LENGTH "L"	CAT. NO.	LENGTH "L"
8900	.120	8916	.400
8901	.140	8917	.420
8902	.160	8918	.440
8903	.180	8919	.450
8904	.200	8920	.460
8905	.220	8921	.480
8906	.240	8922	.500
8907	.250	8923	.550
8908	.260	8924	.600
8909	.280	8925	.650
8910	.300	8926	.700
8911	.320	8927	.750
8912	.340	8928	.800
8913	.350	8929	.850
8914	.360	8930	.900
8915	.380	8931	.925

## "SELF-ALIGNING" FOR BI-LEAD T-1 & T-1 3/4

- These unique, new self-aligning Bi-Lead LED mounting spacers, for T-1 and T-1<sup>3/4</sup> LEDs, reduce labor costs by simplifying preassembly to the printed circuit board
- The spacer features an internally tapered barrier which guides the leads and eliminates the possibility of crimping or shorting. The internal configuration also assures positive self-alignment on .100 centers
- The bosses serve the dual purpose of heat dissipation and easy post soldering cleanup
- Available in a range of lengths from .120 to .925 long. Molded from 6/6 nylon, UL Rated 94V-2

### Key Features...

- Internal design eliminates crimping or shorting of leads
- Positive self-alignment of leads on .100 centers
- Cost and labor saving
- No special tools required



**MATERIAL:** Natural Nylon, UL Rated 94V-2

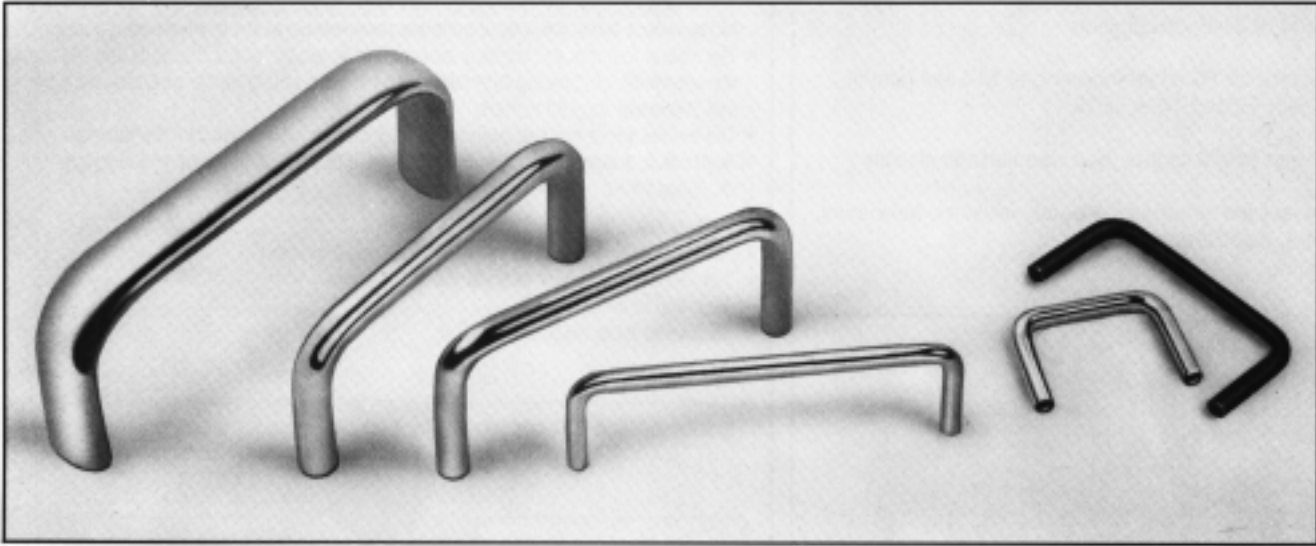
T-1 <sup>3/4</sup>		T-1		T-1 <sup>3/4</sup>		T-1	
CAT. NO.	CAT. NO.	LENGTH "L"	"A" REF.	CAT. NO.	CAT. NO.	LENGTH "L"	"A" REF.
8311	7351	.120	.045	8327	7367	.400	.075
8312	7352	.140	.065	8328	7368	.420	.095
8313	7353	.160	.085	8329	7369	.440	.115
8314	7354	.180	.105	8330	7370	.450	.120
8315	7355	.200	.125	8331	7371	.460	.135
8316	7356	.220	.145	8332	7372	.480	.145
8317	7357	.240	.045	8333	7373	.500	.055
8318	7358	.250	.060	8334	7374	.550	.095
8319	7359	.260	.065	8335	7375	.600	.150
8320	7360	.280	.090	8336	7376	.650	.075
8321	7361	.300	.110	8337	7377	.700	.120
8322	7362	.320	.120	8338	7378	.750	.055
8323	7363	.340	.140	8339	7379	.800	.110
8324	7364	.350	.150	8340	7380	.850	.160
8325	7365	.360	.160	8341	7381	.900	.200
8326	7366	.380	.060	8342	7382	.925	.230



Designers' Choice

# INSTRUMENTATION HANDLES

## INSTRUMENTATION HANDLES



Choice of: Brass or Aluminum — Round or Oval

These instrumentation handles are manufactured in a wide variety of diameters, lengths, platings and internal thread sizes. They will enhance the look of quality products and equipment and provide the sturdy support needed for contemporary equipment.

### ROUND

- .156, .187, .250, .312 and .375 diameters
- Mounting centers from 1.250 to 6.437
- Internal threads 4-40, 6-32, 8-32 and 10-32
- Heights from .625 to 1.750

#### MATERIAL SPECIFICATIONS

Brass: per ASTM-B16  
Aluminum: QQ-A-325, alloy 6061-T6

#### PLATINGS

Brass: Nickel plated per QQ-N-290  
Aluminum: Black anodized per MIL-A-8625

### OVAL

- .625 x .281 diameter
- Mounting centers from 4.000 to 6.437
- Internal threads 10-32
- Heights form 1.375 to 2.000

#### MATERIAL SPECIFICATIONS

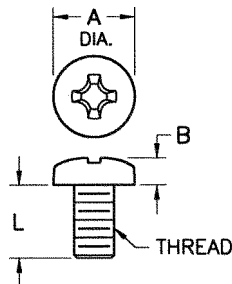
Brass: per ASTM-B16  
Aluminum: QQ-A-325, alloy 6061-T6

#### PLATINGS

Brass: Nickel plated per QQ-N-290  
Aluminum: Black Anodized per MIL-A-8625

## HANDLE MOUNTING SCREWS

- Phillips drive pan head machine screws



CAT. NO.	LENGTH "L"	THREAD	A	B	DRIVER SIZE
9900	1/4 (.250)	4-40	.212	.065	1
9901	3/8 (.375)				
9902	1/2 (.500)				
9903	1/4 (.250)	6-32	.263	.092	2
9904	3/8 (.375)				
9905	1/2 (.500)				
9906	3/8 (.375)	8-32	.314	.110	2
9907	1/2 (.500)				
9908	3/4 (.750)				
9909	3/8 (.375)	10-32	.365	.128	2
9910	1/2 (.500)				
9911	3/4 (.750)				

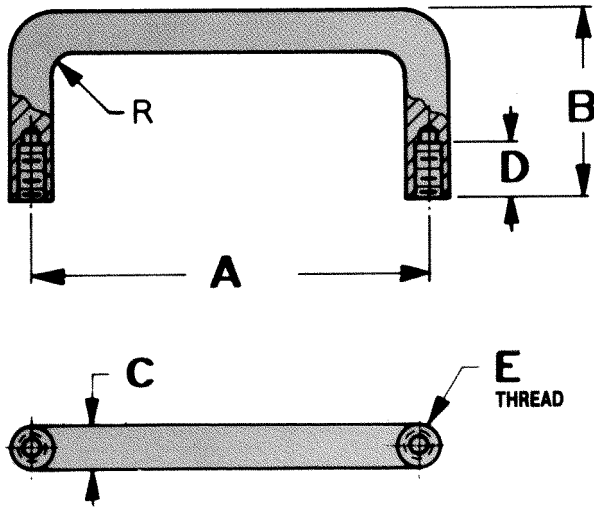
MATERIAL: Stainless Steel

# INSTRUMENTATION HANDLES

Designers' Choice



## ROUND INSTRUMENTATION HANDLES



BRASS CAT. NO.	ALUMINUM CAT. NO.	A Mtg. Ctrs.	B Height	E Thread	D Depth	R Radius	C Diameter
7140	7170	1.250	1.000	4-40	.375	.156	<b>.156</b>
7141	7171	2.000	1.000	4-40	.375	.156	
7142	7172	3.000	1.000	4-40	.375	.156	
9100	9110	1.250	.625	4-40	.156	.187	<b>.187</b>
9101	9111	1.500	.625	4-40	.156	.187	
9104	9114	1.500	.750	4-40	.156	.187	
9102	9112	1.750	.625	4-40	.156	.187	
9105	9115	1.750	.750	4-40	.156	.187	
9103	9113	2.000	.625	4-40	.156	.187	
9106	9116	1.250	1.000	6-32	.250	.187	
9107	9117	1.500	1.000	6-32	.250	.187	
9108	9118	2.000	1.000	6-32	.250	.187	
9109	9119	3.000	1.000	6-32	.250	.187	
7143	7173	3.000	1.500	8-32	.562	.250	<b>.250</b>
485	515	3.000	1.750	8-32	.562	.250	
480	510	3.500	1.500	8-32	.562	.250	
7144	7174	4.000	1.500	8-32	.562	.250	
486	516	4.000	1.750	8-32	.562	.250	
481	511	4.500	1.500	8-32	.562	.250	
487	517	4.500	1.750	8-32	.562	.250	
482	512	5.000	1.500	8-32	.562	.250	
488	518	5.000	1.750	8-32	.562	.250	
483	513	5.500	1.500	8-32	.562	.250	
484	514	6.000	1.500	8-32	.562	.250	
489	519	6.000	1.750	8-32	.562	.250	
7145	7175	3.000	1.500	10-32	.562	.312	<b>.312</b>
7146	7176	4.000	1.500	10-32	.562	.312	
493	523	4.000	1.750	10-32	.562	.312	
490	520	4.500	1.500	10-32	.562	.312	
494	524	4.500	1.750	10-32	.562	.312	
7147	7177	4.562	1.500	10-32	.562	.312	
491	521	5.000	1.500	10-32	.562	.312	
495	525	5.000	1.750	10-32	.562	.312	
492	522	5.500	1.500	10-32	.562	.312	
7148	7178	6.000	1.500	10-32	.562	.312	
496	526	6.000	1.750	10-32	.562	.312	
7149	7179	6.437	1.750	10-32	.562	.312	
7150	7180	4.000	1.375	10-32	.375	.375	<b>.375</b>
7151	7181	6.000	1.375	10-32	.375	.375	

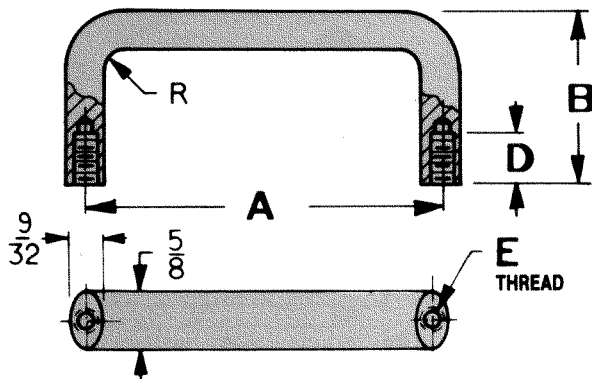
### FERRULES FOR ROUND HANDLES

- To protect and support panel surface



BRASS CAT. NO.	ALUMINUM CAT. NO.	FOR DIA./THREAD	A	B	C	D	E	F
7162	7192	.156/4-40	.250	.120	.047	.125	.200	.161
9120	9122	.187/4-40	.312	.120	.062	.125	.265	.203
9121	9123	.187/6-32	.312	.144	.062	.125	.265	.203
7163	7193	.250/8-32	.375	.170	.062	.187	.320	.260
7164	7194	.312/10-32	.562	.196	.062	.250	.406	.320

## OVAL INSTRUMENTATION HANDLES (.625 x .281)



BRASS CAT. NO.	ALUMINUM CAT. NO.	A Mtg. Ctrs.	B Height	E Thread	D Depth	R Radius
7156	7186	4.000	1.750	10-32	.500	.500
534	544	4.000	2.000	10-32	.500	.500
530	540	4.500	1.750	10-32	.500	.500
535	545	4.500	2.000	10-32	.500	.500
531	541	5.000	1.750	10-32	.500	.500
536	546	5.000	2.000	10-32	.500	.500
532	542	5.500	1.750	10-32	.500	.500
537	547	5.500	2.000	10-32	.500	.500
7157	7187	6.000	1.375	10-32	.375	.500
533	543	6.000	1.750	10-32	.500	.500
538	548	6.000	2.000	10-32	.500	.500
7158	7188	6.437	1.750	10-32	.500	.500

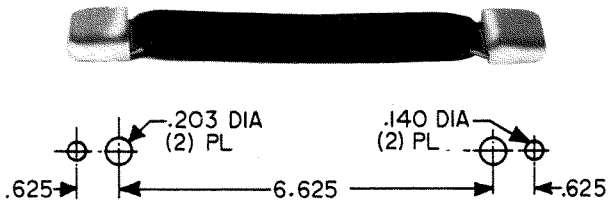


Designers' Choice

# HANDLES

## CARRYING HANDLES

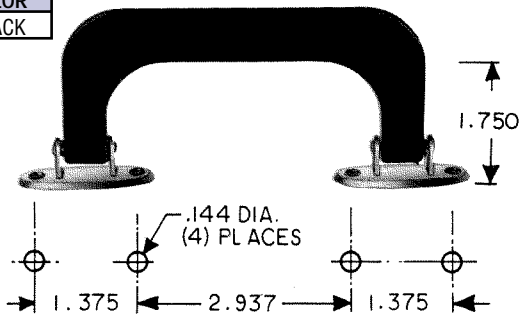
Spring glide handle, manufactured of black leather like material with chrome plated steel hardware. Handle lies flat on case when not in use. Will not rattle under vibration. Maximum extended height at center line, 1 1/4 inches. Mounts with #10-32 screws (not supplied).



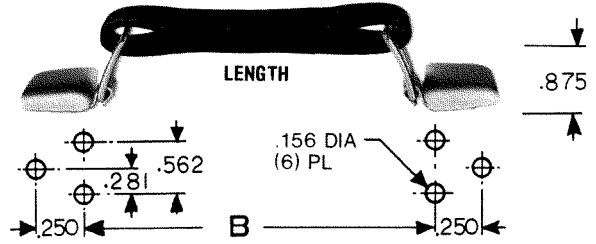
CAT. NO. 8350

Molded of polypropylene with a leather gran look. Folds flat on case when not in use. Mounts with rivets of #6 screws (not supplied)

CAT. NO.	COLOR
8356	BLACK

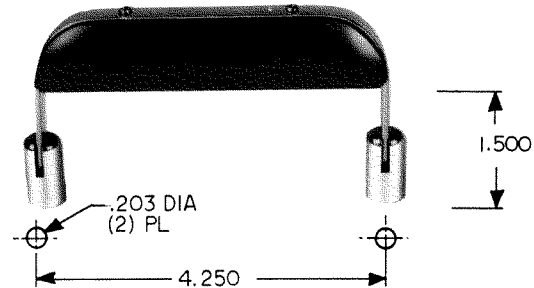


The retracto link handle manufactured of black leather like material with nickel plated steel hardware. It is internally constructed of rubber impregnated cellulose wound over a spring steel core. Handle folds flat on case when not in use. Mounts with #6 size screws.



CAT. NO.	LENGTH	"B"
8351	4-1/2	5-3/4
8351	5-1/2	6-5/8
8353	6-3/4	7-7/8

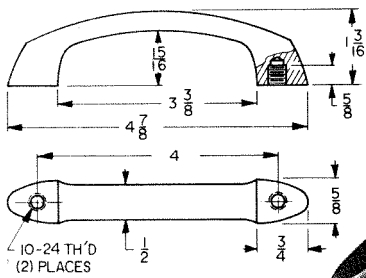
Molded of high impact styrene with steel nickel plated hardware. Folds flat on case when not in use. Mounts with #10-32 screws (not supplied)



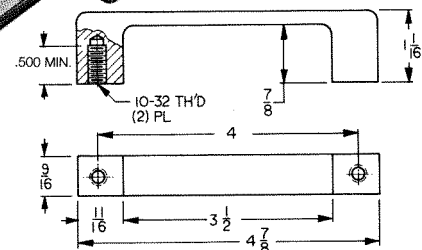
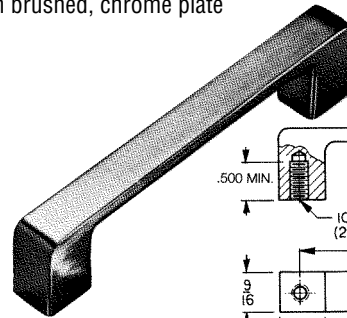
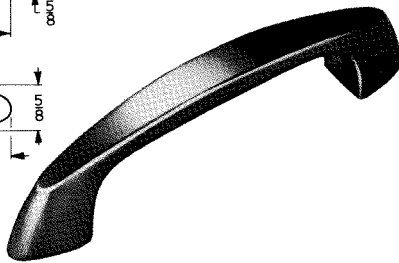
CAT. NO.	COLOR
8354	BLACK
8355	GRAY

## CONTEMPORARY HANDLES

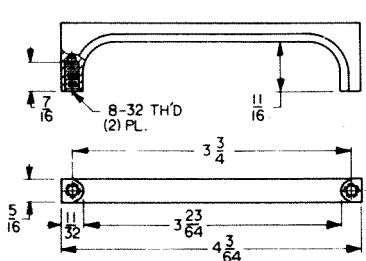
MATERIALS: Zinc; Finish: Satin brushed, chrome plate



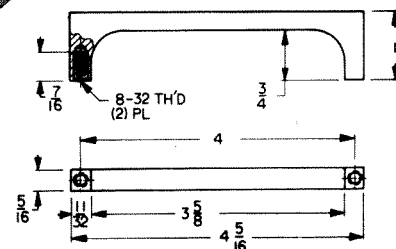
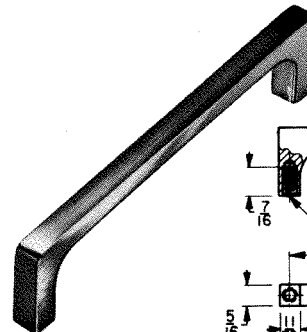
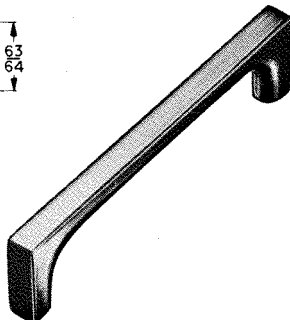
CAT. NO. 7197



CAT. NO. 7196



CAT. NO. 7199



CAT. NO. 7198

# PANEL HARDWARE

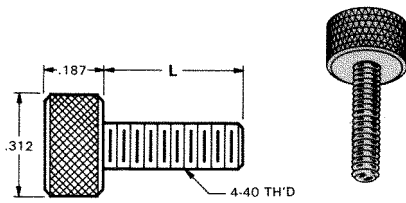
Designers' Choice



MATERIAL: Stainless Steel per ASTM-A581/A582

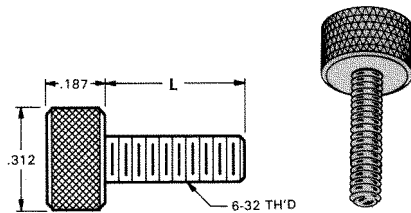
## THUMB SCREWS

4-40



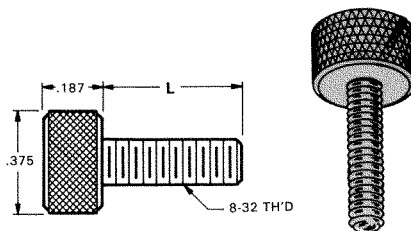
CAT. NO.	LENGTH
2400	.312
2401	.375
2402	.437
2403	.500

6-32



CAT. NO.	LENGTH
2404	.312
2405	.375
2406	.437
2407	.500

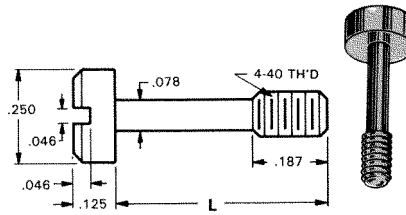
8-32



CAT. NO.	LENGTH
2408	.375
2409	.437
2410	.500
2411	.562
2412	.625

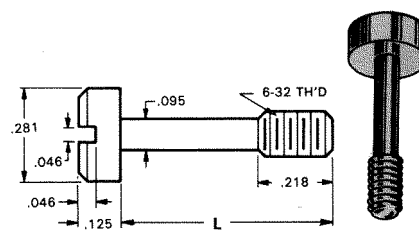
## CAPTIVE SCREWS

4-40



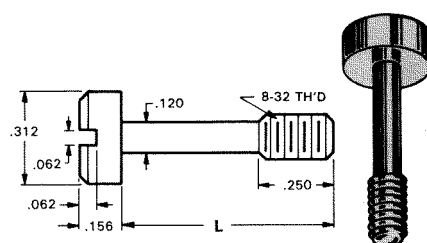
CAT. NO.	LENGTH
2413	.469
2414	.531

6-32



CAT. NO.	LENGTH
2415	.531
2416	.593
2417	.656

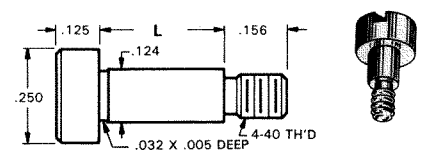
8-32



CAT. NO.	LENGTH
2418	.656
2419	.718
2420	.781

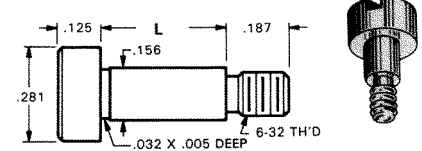
## SHOULDER SCREWS

4-40



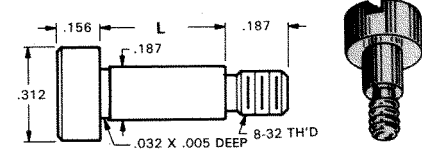
SLOTTED		SOCKET
CAT. NO.	LENGTH	CAT. NO.
2421	.125	2441
2422	.250	2442
2423	.375	2443
2424	.500	2444

6-32



SLOTTED		SOCKET
CAT. NO.	LENGTH	CAT. NO.
2425	.125	2445
2426	.250	2446
2427	.375	2447
2428	.500	2448
2429	.625	2449
2430	.750	2450

8-32



SLOTTED		SOCKET
CAT. NO.	LENGTH	CAT. NO.
2431	.125	2451
2432	.250	2452
2433	.375	2453
2434	.500	2454
2435	.625	2455
2436	.750	2456
2437	1.000	2457

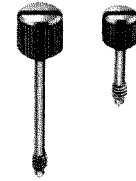
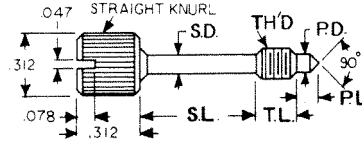
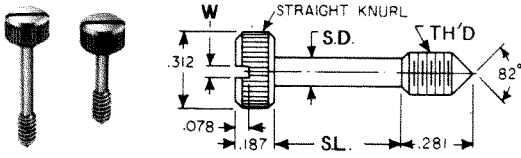


Designers' Choice

# PANEL HARDWARE

## STAINLESS STEEL CAPTIVE PANEL SCREWS

MATERIAL: Stainless Steel per ASTM-A581/A-582

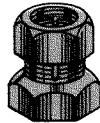
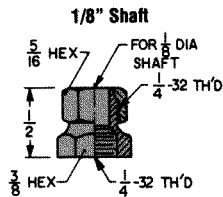


CAT. NO.	TH'D	S.D. +.005	S.L. +.010	W +.005 -.000
8700	4-40	.078	.375	.036
8701	4-40	.078	.500	.036
8702	4-40	.078	.625	.036
8703	6-32	.095	.375	.045
8704	6-32	.095	.500	.045
8705	6-32	.095	.625	.045

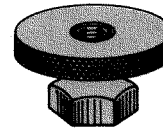
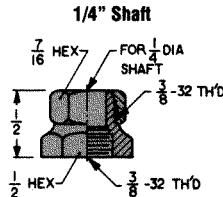
CAT. NO.	TH'D	T.L. +.000 -.015	S.D. +.005	S.L. ±.010	P.D. +.000 -.010	P.L. ±.015
8706	4-40	.125	.078	.171	.078	.078
8707	4-40	.125	.078	.296	.078	.078
8708	4-40	.125	.078	.421	.078	.078
8709	6-32	.218	.095	.187	.095	.093
8710	6-32	.218	.095	.312	.095	.093
8711	6-32	.218	.095	.437	.095	.093

## SHAFT LOCKS (1/8" & 1/4")

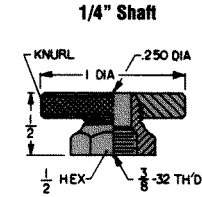
MATERIAL: Brass, ASTM-B16, Nickel Plate per QQ-N-290



CAT. NO. 1700



CAT. NO. 1701



CAT. NO. 1702

## PANEL BEARINGS

STANDARD AND MINIATURE

MATERIAL: Brass, Nickel Plated (QQ-N-290). Supplied unassembled.



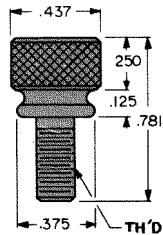
CAT. NO.	A	B	C	D	E
1705	.253	.437	.500	.437	3/8-32 Standard
1706	.128	.343	.437	.375	1/4-32 Miniature

## THUMB SCREWS

For quick removal of panel from chassis.

Other variations available

MATERIAL: Brass, Nickel Plated (QQ-N-290)

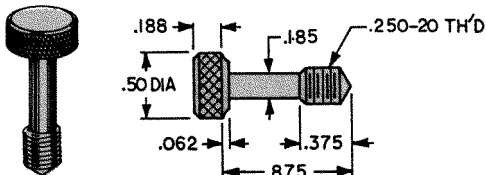


CAT. NO.	THREAD
1708	6-32
1709	8-32
1710	10-32

## STAINLESS STEEL CAPTIVE SCREW

For quick removal of panel from chassis. Other variations available

MATERIAL: Stainless Steel per ASTM-A581/A582

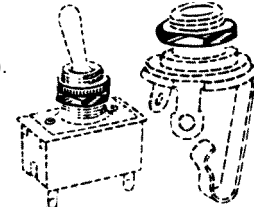


CAT. NO. 1704

## PRECISION PANEL NUTS

For Volume Controls, Switches, Capacitors, Tip Jacks, etc.

MATERIAL: Brass, Nickel Plated (QQ-N-290).



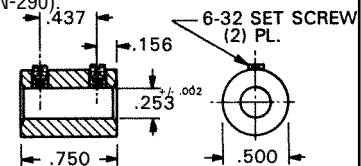
CAT. NO.	FOR	THREAD	DIAMETER	THICKNESS
1448	Mounting	1/4-32	3/8 Hex	3/32"
1449	Mini. Control	1/4-32	5/16 Hex	5/64"
1456	Vol. Control	3/8-32	1/2 Hex	3/32"
1458	Switch	15/32-32	9/16 Hex	5/64"
1459	Switch Ring	15/32-32	5/8 Knurled	1/16"
1472	Filter	5/16-32	3/8 Hex	3/32"

## 1/4" - 1/4" SHAFT COUPLING

MATERIAL: Brass, Nickel Plated (QQ-N-290).

Two set screws hold shaft securely.

Supplied unassembled.



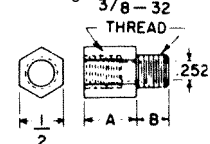
CAT. NO. 1453

## VOLUME CONTROL EXTENDERS

For 1/4" volume control shafts having 3/8-32 threaded bushings.

MATERIAL: Brass, Nickel Plated (QQ-N-290).

CAT. NO.	A	B
1464	.625	.250
1465	.625	.375
1466	.687	.500
1467	.750	.250



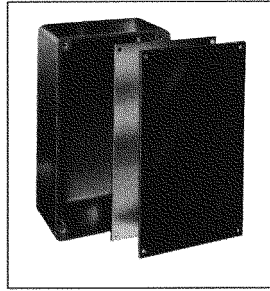
# INSTRUMENTATION CASES & KNOBS

Designers' Choice

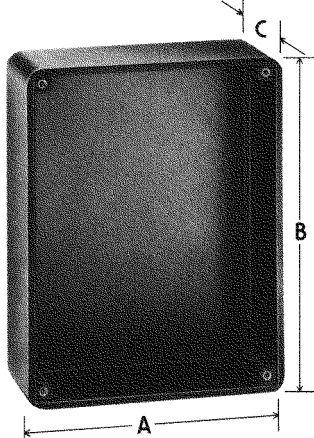


## PHENOLIC INSTRUMENT CASES

CHOICE OF 8 SIZES • STURDY CONSTRUCTION • FLUSH MOUNTING PANELS



Aluminum or Phenolic Panels Available



### SPECIFICATIONS

Phenolic Cases: .125 Wall Thickness, Molded Glossy Black Phenolic, MIL-M-14, CFG  
 Phenolic Panels: .062 Thick Glossy Black Phenolic, MIL-P-3115C  
 Aluminum Panels: .062 Thick, #5052-H34 per QQ 318 C; Bright finished surface with pressure sensitive protective covering tape.  
 Screw Length: .312 for 4-40 screw; .375 for 6-32 screw.

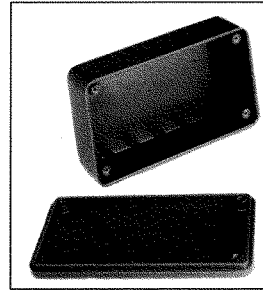
PHENOLIC CASE CAT. NO.	A DIM	B DIM	C DIM	THREAD SIZE AND TYPE	PHENOLIC PANEL CAT. NO.	ALUMINUM PANEL CAT. NO.
715	2.500	3.500	1.250	4-40 TAPPED	2050	2051
703	2.875	4.000	1.562	4-40 TAPPED	2042	2044
705	2.875	4.000	1.562	USE #4 SELF TAPPING SCREW	2042	2044
704	3.125	5.875	2.250	4-40 TAPPED	2043	2045
700	3.750	6.250	2.000	6-32 BRASS INSERT	*2037	2046
716	4.250	5.000	1.750	6-32 BRASS INSERT	*2052	2053
701	5.250	6.812	2.312	6-32 BRASS INSERT	*2038	2047
702	7.375	8.375	3.000	6-32 BRASS INSERT	*2039	2048

\*.093 Thick

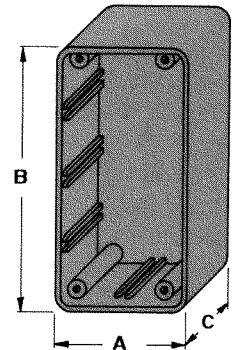
## PLASTIC INSTRUMENT CASES

LOW COST • CHOICE OF 7 SIZES • STURDY CONSTRUCTION  
 Economical cases molded of high impact material. Mating cover has interlocking flange on lid, countersunk holes for flush mounting. Internal grooved guides to hold PC boards and circuit cards from .062 to .093 thick.

IDEAL FOR PROTOTYPE OR PRODUCTION USAGE



Cases supplied with cover and mounting screws



CASE & COVER CAT. NO.	A DIM	B DIM	C DIM	MATERIAL
760	2.000	4.000	.812	Blue Styrene
761	2.437	4.375	1.062	Blue Styrene
762	2.500	4.750	1.400	Blue Styrene
706	2.875	4.000	1.562	Black ABS
763	3.150	6.000	1.840	Blue Styrene
707	3.750	6.250	2.000	Black ABS
764	4.330	7.500	2.220	Blue Styrene

## INSTRUMENTATION KNOBS

### SKIRTED ROUND

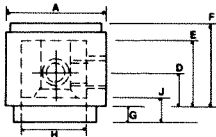


FIG NO. 1

### ROUND WITH DIAL

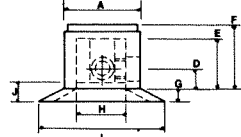


FIG NO. 2

### DOUBLE BAR

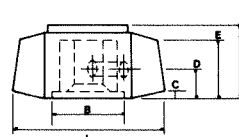


FIG NO. 3

### SINGLE BAR

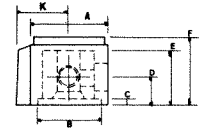


FIG NO. 4

CAT. NO. WITH INDICATOR	FIG NO.	KNOB DIA.	SHAFT DIA.	TWO (2) SET SCREWS	ROUND TYPE NUT CLEARANCE		C MIN	D MAX	HOLE DEPTH		G +/- .030	SKIRTED & DIAL NUT CLEARANCE		K +/- .025/- .005	L MAX
					A +/- .025/- .005	B MIN			E MIN	F +/- .030		H MIN	J MIN		
8554	1	.500	.125	4-40	.505	-	-	.158	.405	.510	.150	.360	.177	-	-
8555	1	.700	.250	4-40	.700	-	-	.187	.405	.510	.170	.485	.188	-	-
8556	1	.900	.250	8-32	.905	-	-	.260	.520	.790	.220	.640	.320	-	-
8557	1	1.250	.250	8-32	1.250	-	-	.250	.455	.700	.150	.750	.250	-	-
8558	2	.500	.125	4-40	.505	-	-	.158	.405	.510	.150	.360	.177	-	.900
8559	2	.700	.250	4-40	.700	-	-	.187	.405	.610	.170	.485	.188	-	1.150
8560	2	.900	.250	8-32	.905	-	-	.260	.520	.790	.220	.640	.320	-	1.525
8561	2	1.250	.250	8-32	1.250	-	-	.250	.455	.700	.150	.750	.250	-	1.837
8565	3	.700	.250	4-40	-	.485	.026	.187	.405	.610	-	-	-	-	1.150
8566	3	.900	.250	8-32	-	.640	.114	.260	.520	.790	-	-	-	-	1.525
8567	4	.500	.125	4-40	.505	.435	.026	.158	.405	.510	-	-	-	.350	-
8568	4	.700	.250	4-40	.700	.485	.026	.187	.405	.610	-	-	-	.460	-
8569	4	.900	.250	8-32	.905	.640	.114	.260	.520	.790	-	-	-	.590	-

MATERIAL: ABS with Aluminum Inlay





Designers' Choice

# PLASTIC FAN FILTER ASSEMBLY

## Meets UL .250 Plug Gauge Test

A unique package consisting of guard, filter media and retainer. The guard and retainer are manufactured with UL rated 94V-0 material. The filter media is made of polyurethane foam (30PPI) and allows free passage of air with minimum air resistance and pressure drop. A major feature of this assembly is that when the filter media requires maintenance you simply remove the snap-fit retainer to clean or replace the filter, leaving the guard attached to the fan. This assures protection to the fan blade and eliminates damage to the fan during cleaning.

### RETAINER

**MATERIAL:** ABS, UL rated 94V-0

- Snap-fit construction
- Designed for minimum air restriction

### MEDIA

- Polyurethane foam material is constructed to allow free passage of air with minimum resistance and pressure drop
- Has a high surface-area contact for impingement of dust particles
- 30PPI material gives a wide range of particle filtration (PPI denotes pores per inch)
- Helps reduce external fan noise
- Easily cleaned by vacuuming or washing with mild soap, detergent or cleaning solvent

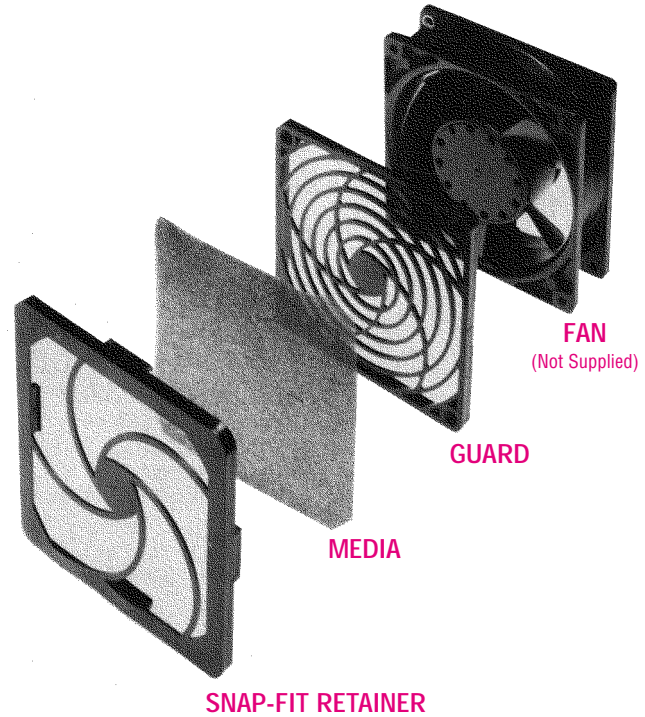
### GUARD

**MATERIAL:** ABS, UL rated 94V-0

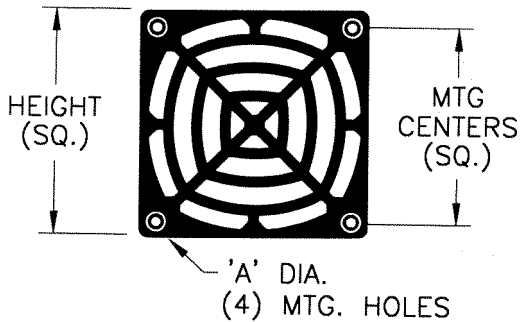
- .250" maximum ring spacing
- Decreased noise level due to design
- Countersunk mounting holes (4)
- Withstands high impact

### FAN

- Customer supplied



## MINI-FAN GUARD ASSEMBLIES



### COMPLETE ASSEMBLY

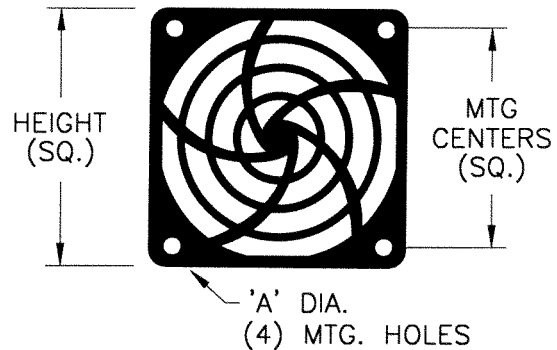
Includes: Guard, Media and Retainer

CAT. NO.	For Fan Size	Height	Thickness	Mtg. Centers	"A" Mtg. Hole
8464	1 1/2" (40mm)	1.570	.240	1.260	.144
8465	2 1/2" (60mm)	2.360	.260	1.970	.170

### FAN GUARD (Only)

CAT. NO.	For Fan Size	Height	Thickness	Mtg. Centers	"A" Mtg. Hole
8466	1 1/2" (40mm)	1.570	.240	1.260	.144
8467	2 1/2" (60mm)	2.360	.260	1.970	.170

## STANDARD FAN GUARD ASSEMBLIES



### COMPLETE ASSEMBLY

Includes: Guard, Media and Retainer

CAT. NO.	For Fan Size	Height	Thickness	Mtg. Centers	"A" Mtg. Holes
8458	3 1/8" (80mm)	3.290	.393	2.810	.155
8459	3 5/8" (92mm)	3.800	.393	3.245	.175
8460	4 1/2" (120mm)	4.870	.420	4.125	.180

### FAN GUARD (Only)

CAT. NO.	For Fan Size	Height	Thickness	Mtg. Centers	"A" Mtg. Holes
8461	3 1/8" (80mm)	3.150	.257	2.810	.155
8462	3 5/8" (92mm)	3.620	.250	3.245	.175
8463	4 1/2" (120mm)	4.650	.279	4.125	.180

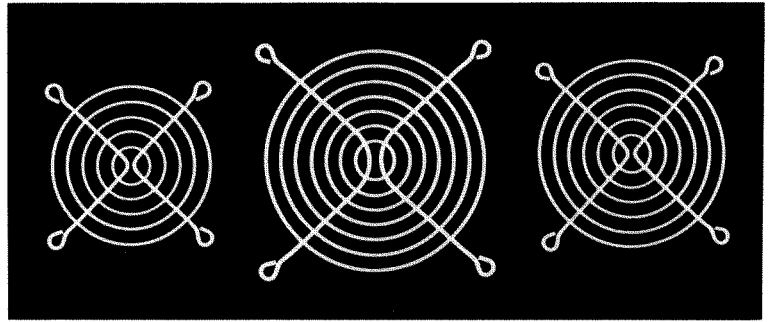
# FAN/FINGER GUARDS

Designers' Choice



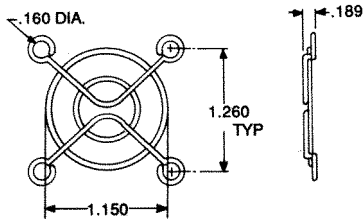
## METAL GUARDS

Made of high quality C-1010 carbon steel wire which combines strength with superior forming. The units offer clean, strong butt welds with minimum flash and have consistent guard diameters to enhance maximum air-flow and venting. Guards are nickel chrome plated.



### FITS 1 1/2" FANS

40mm

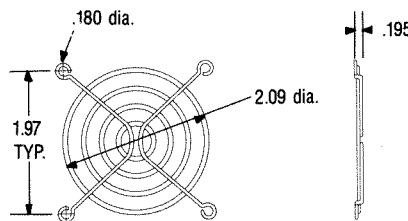


**CONSTRUCTION**  
Rings: .063 wire dia.  
Ribs: .063 wire dia.

CAT. NO. 8447

### FITS 2 1/2" FANS

60mm

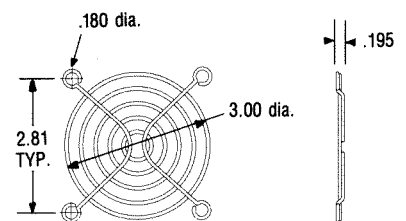


**CONSTRUCTION**  
Rings: .063 wire dia.  
Ribs: .063 wire dia.

CAT. NO. 8449

### FITS 3 1/8" FANS

80mm

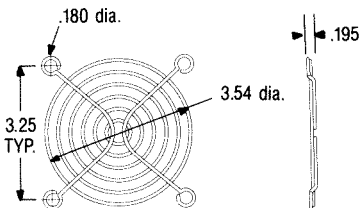


**CONSTRUCTION**  
Rings: .063 wire dia.  
Ribs: .071 wire dia.

CAT. NO. 8450

### FITS 3 5/8" FANS

92mm

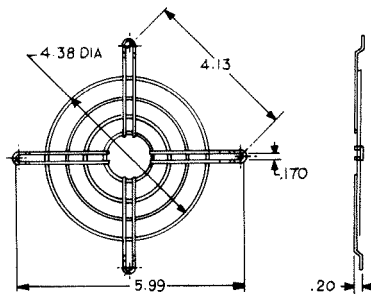


**CONSTRUCTION**  
Rings: .063 wire dia.  
Ribs: .071 wire dia.

CAT. NO. 8451

### FITS 4 1/2" FANS

120mm

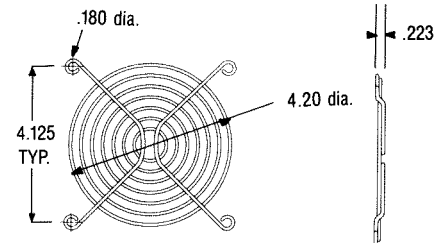


**CONSTRUCTION**  
Rings: .063 wire dia.  
Ribs: .063 wire dia.

CAT. NO. 8448

### FITS 4 1/2" FANS

120mm

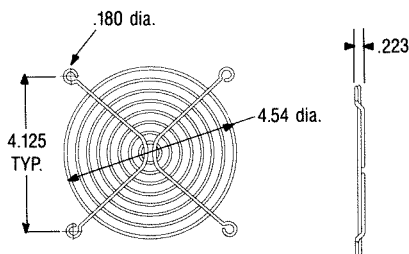


**CONSTRUCTION**  
Rings: .071 wire dia.  
Ribs: .091 wire dia.

CAT. NO. 8452

### FITS 4 1/2" FANS

120mm

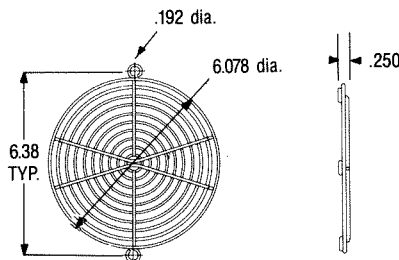


**CONSTRUCTION**  
Rings: .071 wire dia.  
Ribs: .071 wire dia.

CAT. NO. 8453

### FITS 6" FANS

150mm

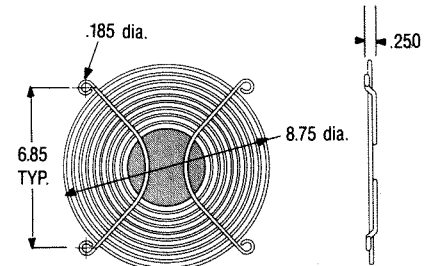


**CONSTRUCTION**  
Rings: .071 wire dia.  
Ribs: .091 wire dia.

CAT. NO. 8455

### FITS 10" FANS

254mm



**CONSTRUCTION**  
Rings: .091 wire dia.  
Ribs: .091 wire dia.

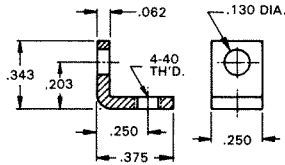
CAT. NO. 8457



Designers' Choice

# THREADED MOUNTING BRACKETS

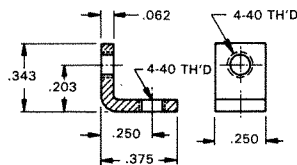
4-40 THREAD



CAT. NO. 612

.062 Steel  
Zinc Plate

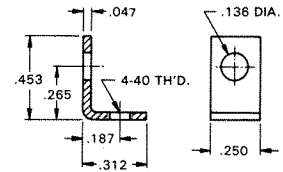
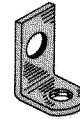
4-40 THREAD



CAT. NO. 621

.062 Steel  
Zinc Plate

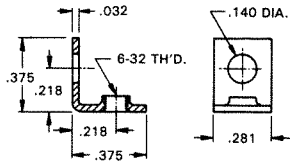
4-40 THREAD



CAT. NO. 616

.047 Brass  
Tin Plate

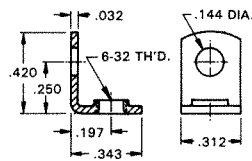
6-32 THREAD



CAT. NO. 634

.032 Brass  
Nickel Plate

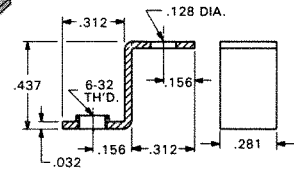
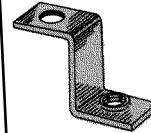
6-32 THREAD



CAT. NO. 614

.032 Brass  
Tin Plate

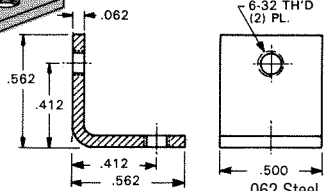
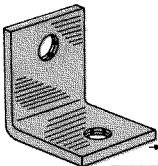
6-32 THREAD



CAT. NO. 630

.032 Brass  
Tin Plate

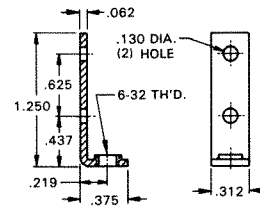
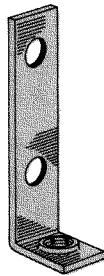
6-32 THREAD



CAT. NO. 4334

.062 Steel  
Nickel Plate

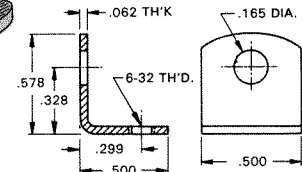
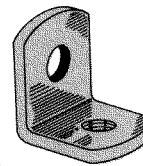
6-32 THREAD



CAT. NO. 708

.062 Steel  
Nickel Plate

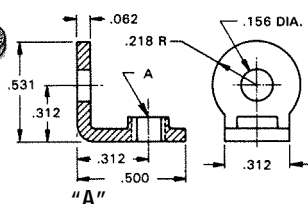
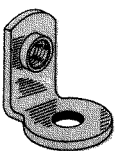
6-32 THREAD



CAT. NO. 617

.062 Steel  
Tin Plate

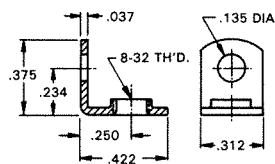
6-32 OR 8-32 THREAD



CAT. NO. 4332 #6-32  
CAT. NO. 4333 #8-32

.062 Brass  
Nickel Plate

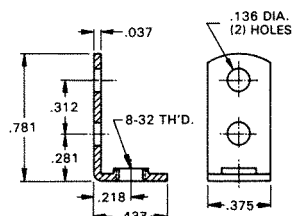
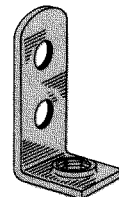
8-32 THREAD



CAT. NO. 611

.037 Brass  
Tin Plate

8-32 THREAD



CAT. NO. 631

.037 Steel  
Tin Plate

# CLEAR HOLE MOUNTING BRACKETS

Designers' Choice



## BOARD BRACKETS

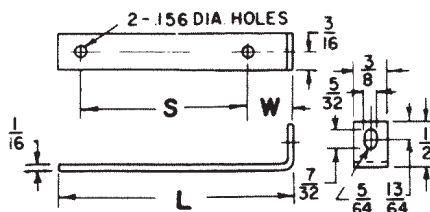
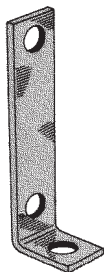
Originally designed for our line of standardized terminal boards; these brackets can also be used in other applications.

Choice of Steel or Aluminum

MATERIAL:

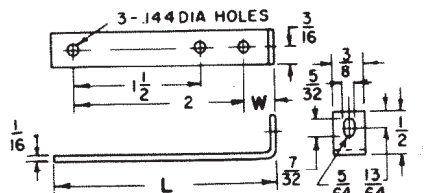
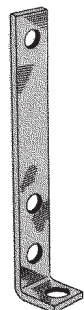
.062 Steel, Nickel Plate

.062 Aluminum



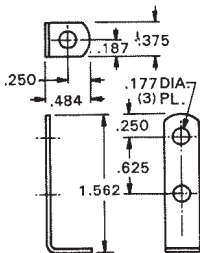
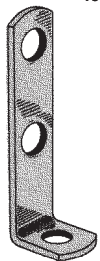
CAT. NO.		W	L	S	For Use With Board No's (see page 98)		
Steel	Alum.				15032	15072	15092
1556	622	3/8	1 5/8	1	15032	15072	15092
1567	623	3/8	2 1/8	1 1/2	15033	15073	15093
1568	624	3/8	2 5/8	2	15034	15074	15094
1569	625	3/8	3 1/8	2 1/2	15035	15075	15095
1570	626	9/32	1 3/16	3/4	15022	15024	15030
1571	627	9/32	1 5/8	1 3/16	15036	15076	15096

.062 STEEL NICKEL PLATE



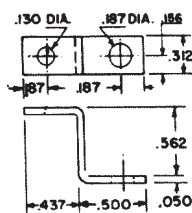
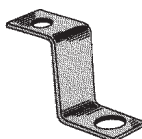
CAT. NO.	L	W
1565	2 5/8	3/8
1566	2 13/16	9/16

.062 STEEL NICKEL PLATE



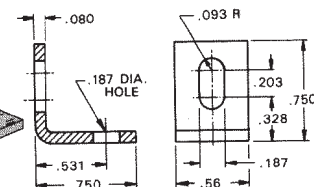
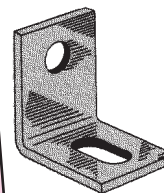
CAT. NO. 1564

.050 STEEL NICKEL PLATE



CAT. NO. 4325

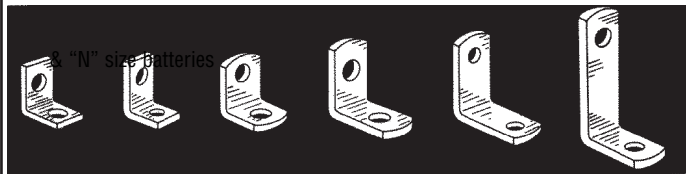
.080 ALUMINUM



CAT. NO. 4337

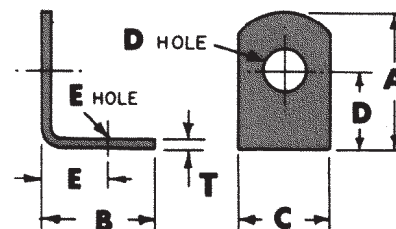
## UNIVERSAL BRACKETS

A wide variety of brackets for various mounting applications.



633	613	615	618 4335 4336	619	620 4326
-----	-----	-----	---------------------	-----	-------------

STANDARD BRACKETS  
(Brass and Steel)



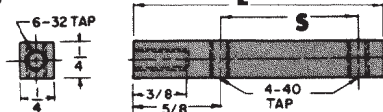
Selection of Brackets with Clear Holes

CAT. NO.	A	B	C	D	"D" Hole Dia.	E	"E" Hole Dia.	"T" Material	Finish
633	.375	.375	.281	.218	.140	.218	.140	.032 Brass	Nickel
613	.390	.453	.375	.234	.147	.299	.128	.032 Brass	Nickel
615	.420	.343	.281	.281	.144	.203	.128	.032 Brass	Tin
4335	.562	.562	.500	.412	.120	.411	.120	.062 Steel	Nickel
4336	.562	.562	.500	.412	.144	.412	.144	.062 Steel	Nickel
618	.628	.628	.375	.378	.169	.378	.169	.050 Brass	Tin
619	.687	.687	.375	.500	.144	.500	.144	.032 Steel	Tin
4326	1.013	.487	.312	.816	.140	.332	.140	.050 Steel	Nickel
620	1.156	.656	.375	.906	.169	.420	.169	.032 Steel	Tin

## BOARD SUPPORT BRACKETS

MATERIAL: Brass, Zinc Plate

A sturdy support for mounting of standardized terminal boards.



CAT. NO.	Overall Length "L"	Spacing "S"
1647	2 3/8	1 1/2
1648	2 7/8	2
1649	3 3/8	2 1/2

## CUSTOM STAMPING AND ASSEMBLY

Keystone is fully integrated to meet your total design & production needs.

Manufacturing custom designs & modifications of standard items is our specialty.

Quotations on special **stamping & assembly** furnished promptly upon receipt of sample, sketch, print or CAD drawings.



Designers' Choice

# COMPUTER BRACKETS



These printed circuit card brackets have been designed to fit all PC computers and are available with a variety of holes and cutouts to connect any peripheral.

The standard brackets shown reflect the most common configurations and cutouts for specific applications. If our standard brackets do not suit your applications we can fabricate a bracket to your exact requirements. (See page 65)

These premium quality brackets have a "high luster" finish for appearance and durability.

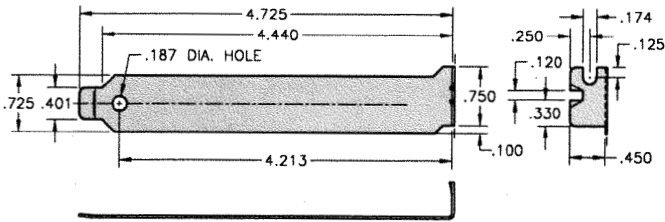
- Premium quality
- Designed to fit all PC computers
- Standard brackets available for most common configurations
- A variety of holes and cutouts to suit all peripherals
- Special configurations available to meet specific needs
- Standard international symbol markings available
- Blanks available for "fillers"
- Fast delivery and cost effective tooling for special designs

MATERIAL: .032 Steel, Nickel Plate



## STANDARD BLANKS & BRACKETS

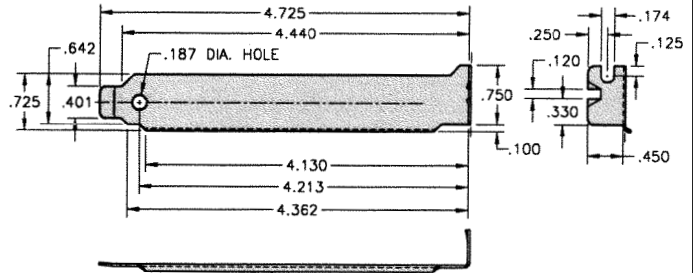
### EISA/ISA or PCI



CAT. NO. 9200

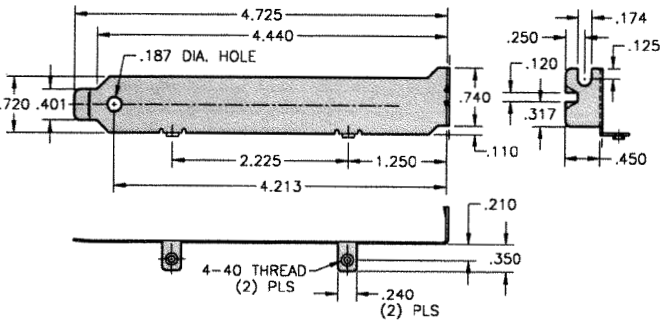
### EISA/ISA or PCI

- Reinforced with rib for extra strength



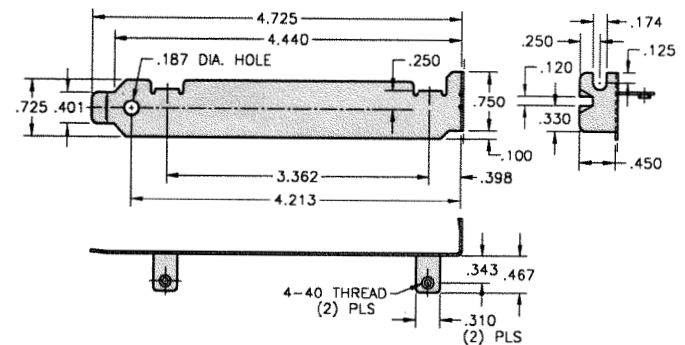
CAT. NO. 9201

### EISA/ISA



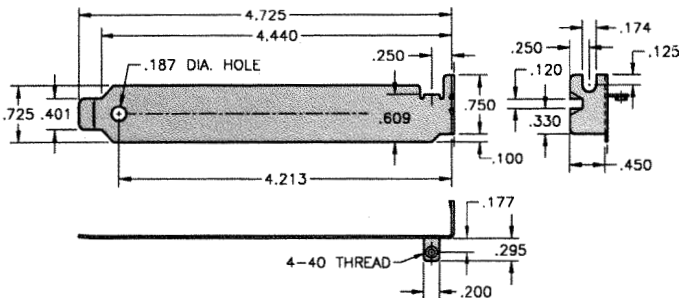
CAT. NO. 9202

### PCI



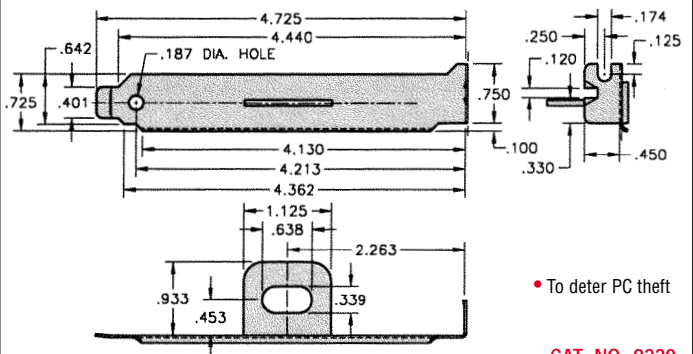
CAT. NO. 9203

### PCI



CAT. NO. 9204

## SECURITY BRACKET



- To deter PC theft

CAT. NO. 9220

# STANDARD COMPUTER BRACKETS

Designers' Choice



Note: For panel cutout dimensions see page 64

9 PIN	EISA/ISA	<p>CAT. NO. 9200-1 For Bracket Dimensions Refer To Cat. No. 9200</p>	<p>CAT. NO. 9200-6 For Bracket Dimensions Refer To Cat. No. 9200</p>	SCSI 1
	PCI	<p>CAT. NO. 9200-2 For Bracket Dimensions Refer To Cat. No. 9200</p>	<p>CAT. NO. 9200-7 For Bracket Dimensions Refer To Cat. No. 9200</p>	
15 PIN	EISA/ISA	<p>CAT. NO. 9200-3 For Bracket Dimensions Refer To Cat. No. 9200</p>	<p>CAT. NO. 9200-8 For Bracket Dimensions Refer To Cat. No. 9200</p>	SCSI 2, 3 & 4
	EISA/ISA	<p>CAT. NO. 9200-4 For Bracket Dimensions Refer To Cat. No. 9200</p>	<p>CAT. NO. 9200-9 For Bracket Dimensions Refer To Cat. No. 9200</p>	
SOUND	EISA/ISA	<p>CAT. NO. 9204-1 For Bracket Dimensions Refer To Cat. No. 9204</p>	<p>CAT. NO. 9203-1 For Bracket Dimensions Refer To Cat. No. 9203</p>	MODEM
	A/V	<p>CAT. NO. 9201-1 For Bracket Dimensions Refer To Cat. No. 9201</p>	<p>CAT. NO. 9202-1 For Bracket Dimensions Refer To Cat. No. 9202</p>	
USB	EISA/ISA or PCI	<p>CAT. NO. 9200-10 For Bracket Dimensions Refer To Cat. No. 9200</p>	<p>CAT. NO. 9203-2 For Bracket Dimensions Refer To Cat. No. 9203</p>	NETWORK

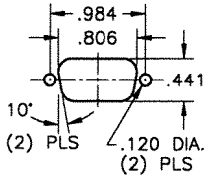


Designers' Choice

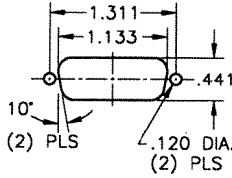
# BRACKET CUTOUTS & MARKINGS

## STANDARD PANEL CUTOUTS

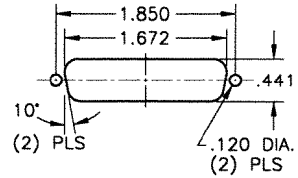
**TYPE 9**



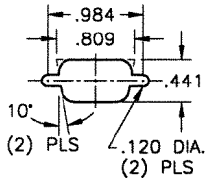
**TYPE 15**



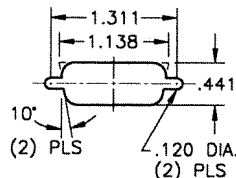
**TYPE 25**



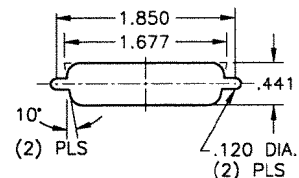
**TYPE 9A**



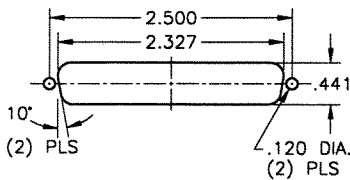
**TYPE 15A**



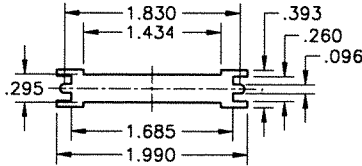
**TYPE 25A**



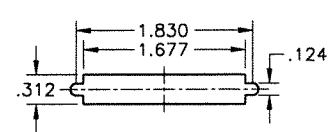
**TYPE 37**



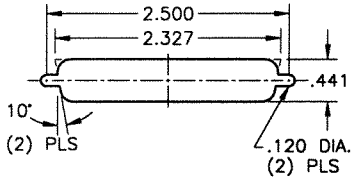
**SCSI 1 - 50 PIN**



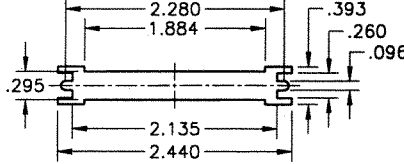
**SCSI 2, 3 or 4 - 50 PIN**



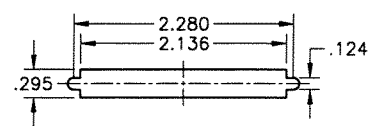
**TYPE 37A**



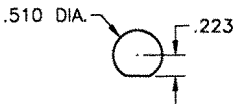
**SCSI 1 - 68 PIN**



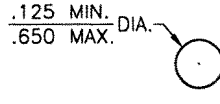
**SCSI 2, 3 or 4 - 68 PIN**



**BNC**



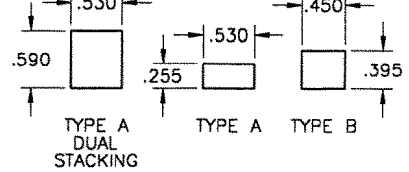
**ROUND**



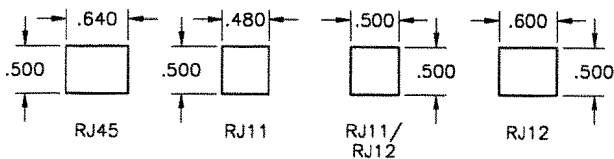
RECOMMENDED SIZES

PS/2 = .650      Stereo Jacks = .280  
Mini-Din = .400 to .650      Phono Jacks = .400

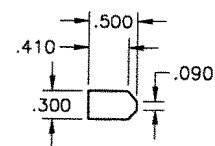
**USB**



**RJ11 - RJ45**



**IEEE 1394 - "FIREWIRE"**

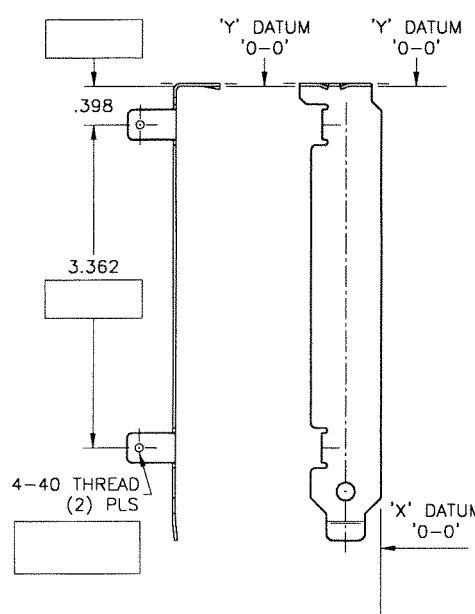
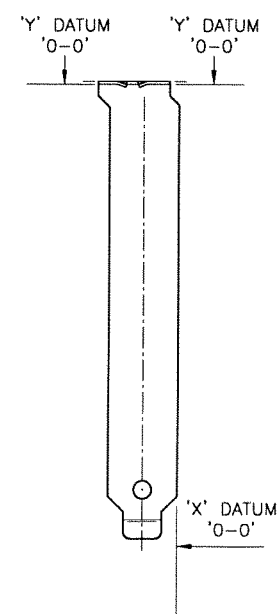
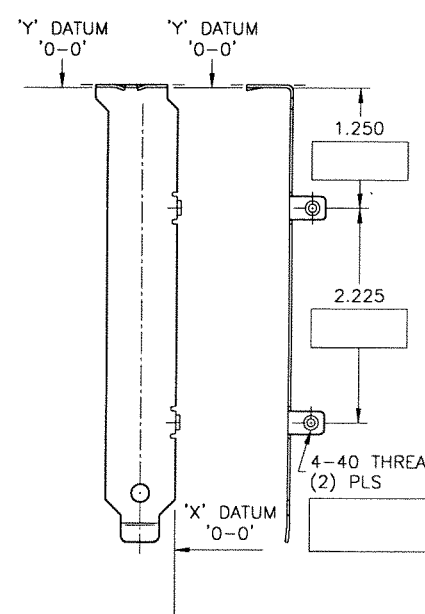


## STAMPED IDENTIFICATION MARKINGS

- AUDIO IN
- AUDIO OUT
- LINE IN
- LINE OUT
- VGA IN
- VGA OUT
- SVIDEO IN
- SVIDEO OUT
- VIDEO IN
- VIDEO OUT
- CAMERA IN
- TUNER OUT
- INPUT
- OUTPUT
- MIC
- S/P DIF
- PHONE
- LINE
- HAND SET
- ISDN



## CUSTOM BRACKET WORKSHEET

<input type="checkbox"/> PCI with tabs    <input type="checkbox"/> CAT. NO. 9203 Blank	<input type="checkbox"/> PCI <input type="checkbox"/> EISA/ISA    <input type="checkbox"/> CAT. NO. 9200 Blank <input type="checkbox"/> CAT. NO. 9201 Blank (Ribbed)	<input type="checkbox"/> EISA/ISA with tabs    <input type="checkbox"/> CAT. NO. 9202 Blank
---	---	--

NOTE: Reference page 62 for overall blank dimensions

If you do not have your own drawing, please use the worksheet provided.

- Step 1:** Select a standard blank configuration PCI or EISA/ISA, with or without tabs.
- Step 2:** If you've selected a standard blank with tabs and the tab locations do not meet your requirements, indicate the dimensions in the boxes.
- Step 3:** Select your standard panel cutouts (page 64) and place them on your selected drawing.
- Step 4:** Use Datum's X and Y on drawing, to indicate the precise location of the center lines of the cutout(s).
- Step 5:** For stamped identification markings (page 64) indicate the approximate location(s).
- Step 6:** Quantities Required: \_\_\_\_\_

If you have any questions, please contact our application engineers.

Name: \_\_\_\_\_ Title: \_\_\_\_\_

Company: \_\_\_\_\_

Address: \_\_\_\_\_

Phone: \_\_\_\_\_ Fax: \_\_\_\_\_

For prompt quotations fax, mail or e-mail this worksheet.





Designers' Choice

# IEEE 1394 PLUGS & SOCKETS

## HI-SPEED SERIAL BUS – IEEE 1394 SOCKETS

"FIREWIRE"



### THE HI-SPEED "JACK" FOR THE 21ST CENTURY

#### FEATURES

- Snap-In PC tails hold connector in position for soldering
- Tin Lead Plated solder tails for excellent solderability
- Gold Plated contacts for low contact resistance and excellent reliability

#### SPECIFICATIONS

Shell: Phosphor Bronze  
 Insulator: Thermoplastic, Rated UL 94V-0  
 Contacts: Phosphor Bronze  
 Plating:  
 Contact Area: Gold Flash over Nickel  
 Solder Tails: Tin Lead over Nickel

#### ELECTRICAL CHARACTERISTICS

Rated Voltage: 30VAC (RMS)  
 Contact Current Rating: 1 Amp DC max.  
 Contact Resistance: 15 mΩ  
 Insulation Resistance: 1000 MΩ min.  
 Dielectric Withstanding Voltage:  
 750V AC for 1 minute  
 Operating Temperature:  
 32°F (0°C) to 104°F (40°C)  
 Capacitance: 2pF max.

#### DESIGN ADVANTAGES

**Superfast Data Transfer:**  
 Current speeds of 100Mbps, 200Mbps and 400Mbps, and roadmapped to 1GB to 3.2 Gbps per second

**Daisy Chaining:** Up to 63 devices, each one acts as an active repeater on the bus, with a maximum of 16 repeats

**Port Expansion:** Alleviates restriction of limited COM Ports and available IRQ's

**Wide Bandwidth:** Operates in asynchronous or isochronous data streams. Digital interface designed for high speed applications for PC peripherals, consumer electronics and communications.

**Simple Connections:** True Plug and Play no jumpers, DIP Switches or IRQ's to set

**Hot Swapping:** Allows peripherals to be connected or disconnected without turning off computer

**Highly Versatile Bus:** One bus can handle a variety of devices operating at different speed classes for true backwards compatibility

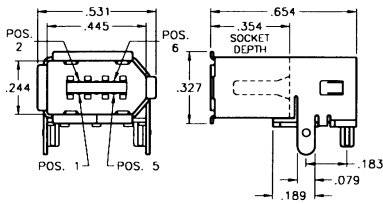
**Standard Digital Interface:** Allows consumer electronics and computer devices to communicate together on one interface

#### DEVICE APPLICATIONS

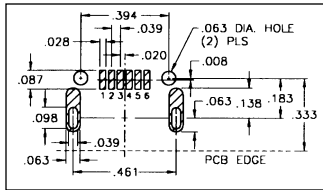
- Broadcast TV
- Cable TV
- Digital Camcorders
- Digital Cameras & VCRs
- Computers & Hard Disks
- DVD Players
- Printers & Monitors
- Stereos

#### SURFACE MOUNT

##### HORIZONTAL



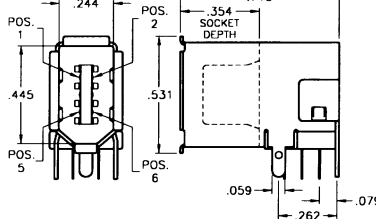
##### Mounting Detail



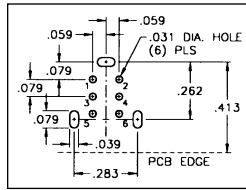
CAT. NO. 927

#### THRU-HOLE MOUNT

##### UP-RIGHT



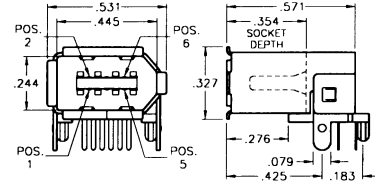
##### Mounting Detail



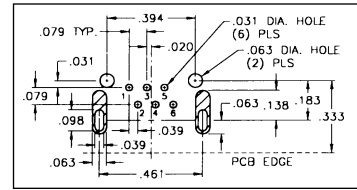
CAT. NO. 930

#### THRU-HOLE MOUNT

##### HORIZONTAL



##### Mounting Detail



CAT. NO. 929

## IEEE 1394 PLUG

"FIREWIRE"



#### FEATURES

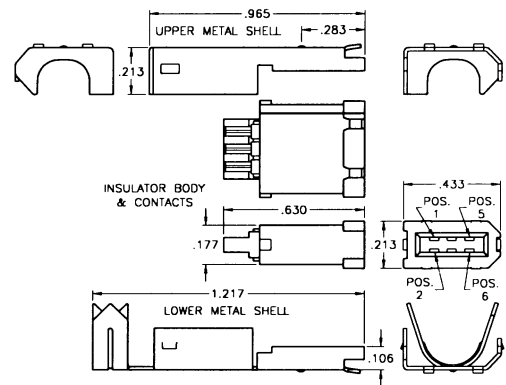
- Modular design allows easy and fast assembly of components
- Integrated strain relief - crimps to wire insulation
- Tin Lead Plated solder tails for excellent solderability
- Gold Plated contacts for low contact resistance and excellent reliability

#### SPECIFICATIONS

Shell: Phosphor Bronze  
 Insulator: Thermoplastic, Rated UL 94V-0  
 Contacts: Phosphor Bronze  
 Plating:  
 Contact Area: Gold Flash over Nickel  
 Solder Tails: Tin Lead over Nickel

#### ELECTRICAL CHARACTERISTICS

Contact Resistance: 30mΩ max.  
 Insulation Resistance: 100 MΩ min.  
 Withstanding Voltage: 500V ± 50V DC  
 Operating Temperature: 32°F (0°C) to 104°F (40°C)



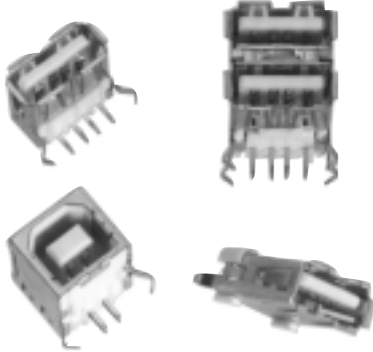
CAT. NO. 928 (Supplied Unassembled)

# USB PLUGS & SOCKETS

Designers' Choice



## UNIVERSAL SERIAL BUS SOCKETS



### FEATURES

- Snap-In PC solder tails hold connector in position for wave soldering
- Tin Lead Plated solder tails for excellent solderability
- Gold Plated contacts for low contact resistance and excellent reliability

### SPECIFICATIONS

Shell: Phosphor Bronze  
 Insulator: Thermoplastic, UL 94V-0  
 Contacts: Phosphor Bronze  
 Contact Area: Gold Flash over Nickel  
 Solder Tails: Tin Lead over Nickel

### ELECTRICAL CHARACTERISTICS

Rated Voltage: 30V (RMS)  
 Contact Current Rating: 1 Amp DC max.  
 Contact Resistance: 15 mΩ max.  
 Insulation Resistance: 1000MΩ min.  
 Dielectric withstanding Voltage: 750V AC for 1 minute  
 Operating Temperature: -13°F (-25°C) to 176°F (+80°C)

### DESIGN ADVANTAGES

**Port Expansion:**  
 Alleviates restriction of limited COM Ports and available IRQ's

**Daisy Chaining:**  
 Up to a max of 127 devices to the root hub

**Fast Data Transfer:**  
 Up to 12 Mbps; 3-5 times faster than parallel devices and 20-40 times faster than serial ports

**Hot-Swapping:**  
 Allows peripherals to be connected or disconnected without turning off computer

**Simple Connections:**  
 True Plug and Play; No jumper, DIP Switches or IRQ's to set

**True Digital Audio:**  
 Allows USB Speakers to BYPASS the sound card and receive true digital audio sound quality

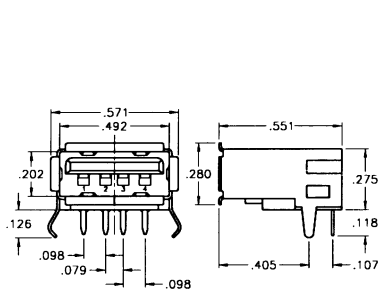
### DEVICE APPLICATIONS

Ability to daisy chain more than one input device

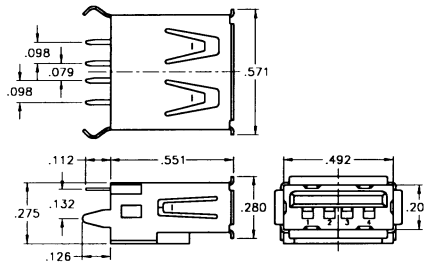
- Mouse
- Trackball
- Keyboards
- Printers
- Joysticks
- Modems
- Scanners Digital Cameras
- Telephones
- Fingerprint I.D. Systems
- Digital Speakers: Connect directly with the computer for true digital audio clarity

### SINGLE A-TYPES

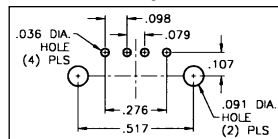
#### HORIZONTAL



#### VERTICAL



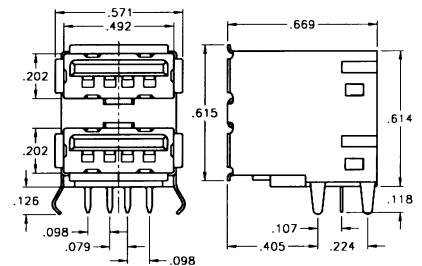
Mounting Detail



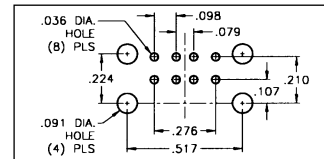
CAT. NO. 921

### DUAL A-TYPE

#### DUAL STACKING



Mounting Detail

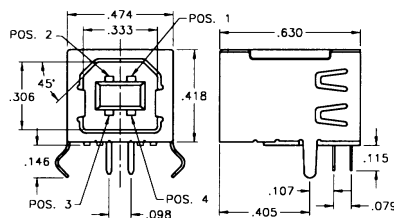


CAT. NO. 923

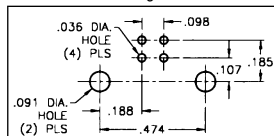
CAT. NO. 922

### B-TYPE

#### HORIZONTAL



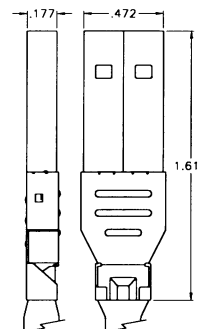
Mounting Detail



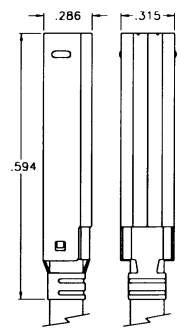
CAT. NO. 924

## USB PLUGS

### A-TYPE



### B-TYPE



### SPECIFICATIONS

Shell: Steel, Tin Plated  
 Insulator: Thermoplastic, Rated UL 94V-0  
 Contact: Bronze, Gold Flash over Nickel

Supplied Unassembled

CAT. NO. 925

CAT. NO. 926

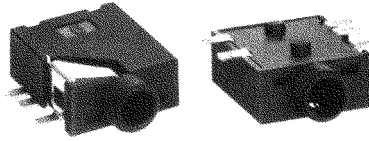


Designers' Choice

# AUDIO JACKS & "F" CONNECTORS

## SURFACE MOUNT STEREO JACKS

- Mates with 2.5mm and 3.5mm plugs
- Designed for reliable interface with audio equipment including computer speakers, headphones, sound cards, cell phones, etc.
- Models available for mono and stereo applications
- Low profile, surface mount design



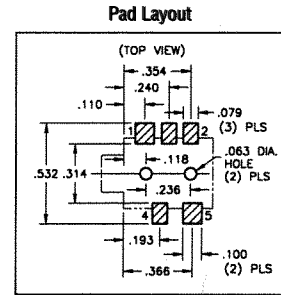
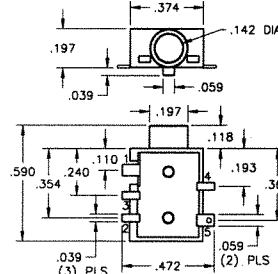
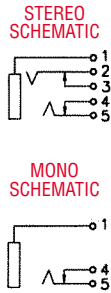
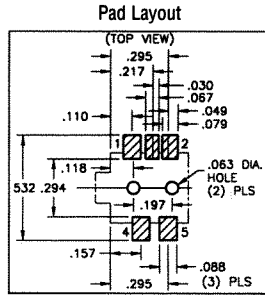
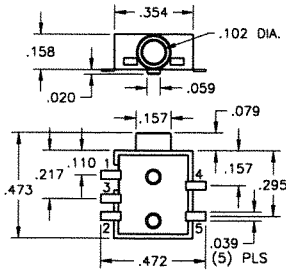
### SPECIFICATIONS

Housing: Polyamide, Rated UL 94V-0  
 Ground Terminal: .012 Brass, Gold Flash ①  
 Spring Contacts: .008 Phosphor Bronze, Gold Flash ② ⑤  
 Shunt Terminals: .012 Brass, Gold flash ③ ④

### FOR 2.5mm PLUGS

Supplied on Tape and Reel

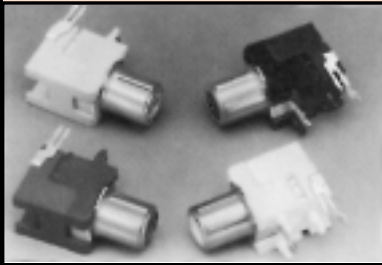
### FOR 3.5mm PLUGS



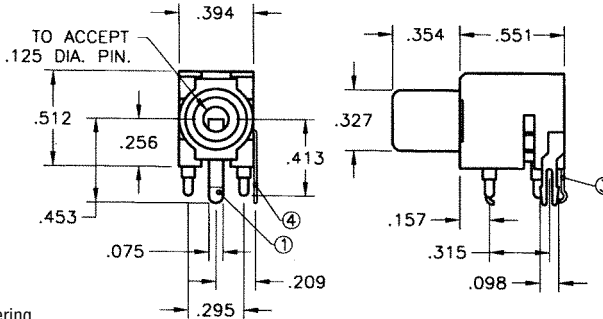
CAT. NO. 980TR (Stereo) Tape Spec's: 24mm wide; 16mm pitch  
 CAT. NO. 982TR (Mono) Reel Spec's: 15 inch reel (1,000 pieces per reel)

CAT. NO. 981TR (Stereo) Tape Spec's: 24mm wide; 16mm pitch  
 CAT. NO. 983TR (Mono) Reel Spec's: 15 inch reel (800 pieces per reel)

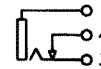
## COLOR KEYED — PC PHONO JACKS



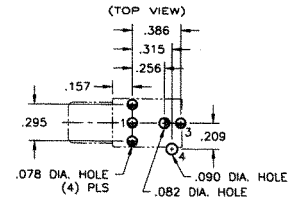
- Mates with .125 diameter pins
- Features a normally closed circuit
- Various colors for circuit identification
- Snap-fit mounting for positive retention during wave soldering



### SCHEMATIC



### Mounting Detail



CAT. NO.	COLOR
970	WHITE
971	RED
972	BLACK
973	YELLOW

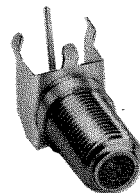
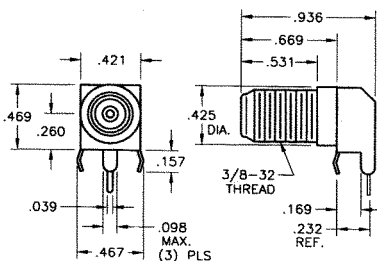
### SPECIFICATIONS

Housing: PBT  
 Ground Terminal: .020 Brass, Nickel Plate ①  
 Spring Contact: .012 Phosphor Bronze, Silver Plate ③  
 Shunt Terminal: .016 Brass, Silver Plate ④

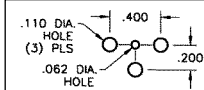
## "F" FEMALE CONNECTORS

### SNAP-FIT PC MOUNT

- Low profile
- Snap-fit mounting for positive retention during wave soldering
- Rugged, stable construction facilitates reliable mating
- High reliability, manufactured using Nickel Plated Brass bodies and Tin Plated Phosphor Bronze contacts
- Supplied with washer and nut



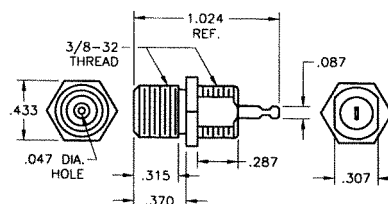
### Mounting Detail



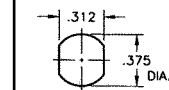
CAT. NO. 911

### PANEL MOUNT

- Anti-rotation design
- Rugged construction facilitates reliable mating
- High reliability, manufactured using Nickel Plated Brass bodies and Tin Plated Phosphor Bronze contacts
- Supplied with washer and nut



### Mounting Detail



CAT. NO. 912

# PC PHONO JACKS

Designers' Choice

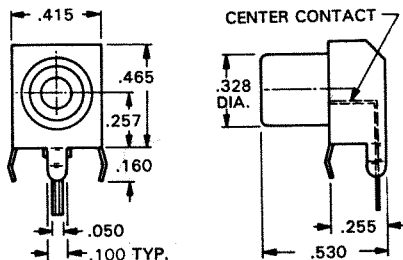
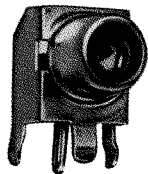


NOTE: All jacks on this page mate with 1/8" diameter pins.

## SNAP-FIT 90° PC PHONO JACK

CHOICE OF TIN OR GOLD PLATE

Complete on piece jack for insertion into PC board. Time Saving. No Wiring Required. Snap-fits into PC board.

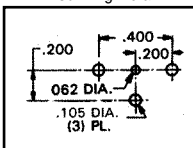


### MATERIAL

Shell: Steel  
Contact: Brass  
Plating: Tin or Gold

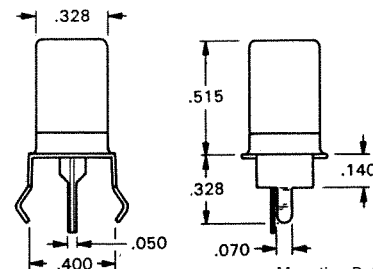
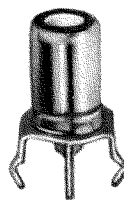
CAT. NO. 901 (TIN PLATE)  
CAT. NO. 900 (GOLD PLATE)

Mounting Detail

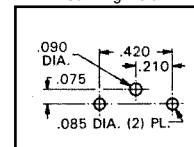


## SNAP-FIT VERTICAL PC PHONO JACK

Extra long, one piece shell to accept plugs with longer pins for greater contact. Snaps into holes on PC Board and firmly held for soldering. No staking required.



Mounting Detail



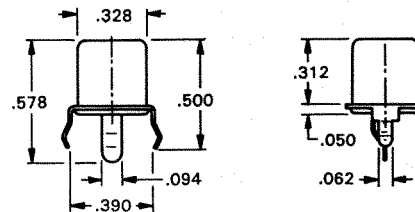
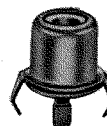
### MATERIAL

Shell: Steel  
Contact: Brass  
Plating: Tin

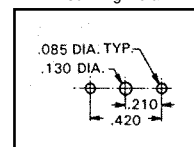
CAT. NO. 577

## SNAP-FIT VERTICAL PC JACK

Snaps into holes on PC Board and firmly held for soldering. No staking required.



Mounting Detail

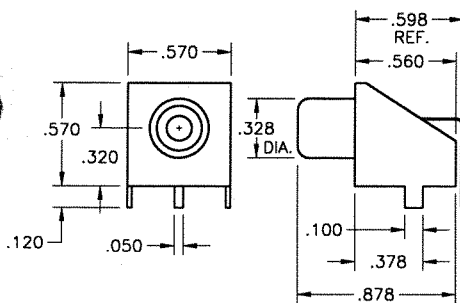
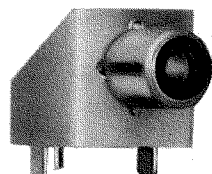


### MATERIAL

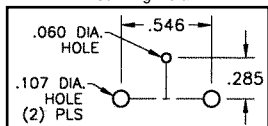
Shell: Steel  
Contact: Brass  
Plating: Tin

CAT. NO. 572

## 90° PC PHONO JACK



Mounting Detail



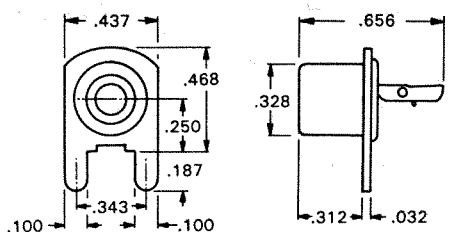
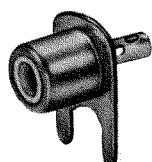
### MATERIAL

Shell: Steel - Nickel Plate  
Contact: Brass - Tin Plate

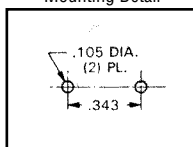
CAT. NO. 902

## 90° PC PHONO JACK

Mounted on bracket ready for insertion into pre-drilled holes



Mounting Detail



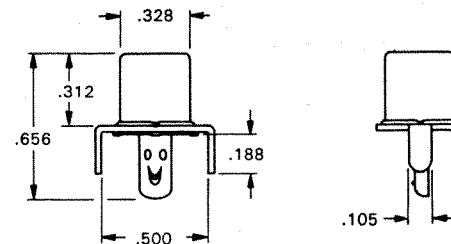
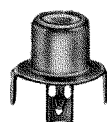
### MATERIAL

Shell: Steel  
Contact: Brass  
Plating: Tin

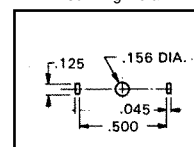
CAT. NO. 571

## VERTICAL PC PHONO JACK

For applications requiring staking to product



Mounting Detail



### MATERIAL

Shell: Steel  
Contact: Brass  
Plating: Tin

CAT. NO. 573



Designers' Choice

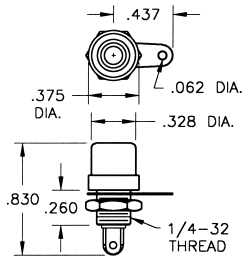
# PLUGS & JACKS

## PANEL MOUNT PHONO JACKS

- Mats with 1/8" diameter pin
- Mounts to panel in .296 Dia. Hole
- Color coded for ease of identification
- Complete with nut and soldering lug

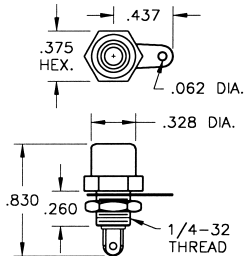
**MATERIAL:** Brass, Nickel Plate

### ROUND BASE



CAT. NO. 580 (RED INSULATOR)  
CAT. NO. 574 (BLACK INSULATOR)

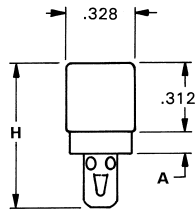
### HEX BASE



CAT. NO. 576 (BLACK INSULATOR)

## RIVET TYPE PHOTO JACKS

- Mates with 1/8" diameter pin
- Rivet type-mounts in .296 Dia. Hole
- Available for 1/16" 3/32" 1/8" thick

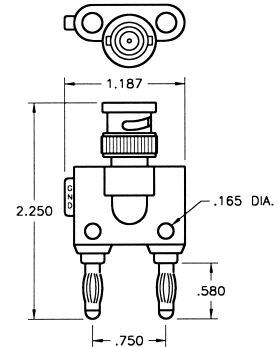


**MATERIAL**  
Shell: Steel  
Contract: Brass  
Plating: Tin

CAT. NO.	A	H	INSULATOR THICKNESS
568	.078	.656	1/16"
569	.109	.812	3/32"
570	.140	.812	1/8"

## BNC TO DUAL BANANA PLUGS

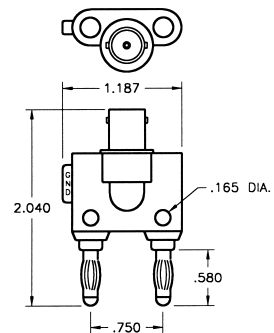
### BNC MALE TO DUAL BANANA PLUGS



**MATERIAL**  
Body: Molded Plastic  
Connector: Brass, Nickel Plate  
Center Contract: Brass, Gold Plate  
Banana Plug: Beryllium Copper, Nickel Plate

CAT. NO. 7020

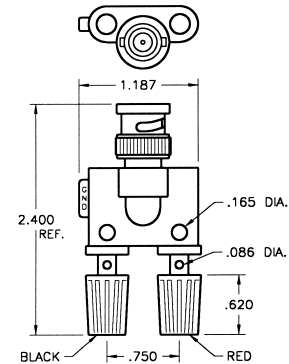
### BNC FEMALE TO DUAL BANANA PLUGS



**MATERIAL**  
Body: Molded Plastic  
Connector: Brass, Nickel Plate  
Center Contract: Brass, Gold Plate  
Banana Plug: Beryllium Copper, Nickel Plate

CAT. NO. 7021

### BNC MALE TO DUAL BINDING POSTS (BLACK & RED)



**MATERIAL**  
Body: Molded Plastic  
Connector: Brass, Nickel Plate  
Center Contract: Brass, Gold Plate  
Banana Plug: Brass, Nickel Plate

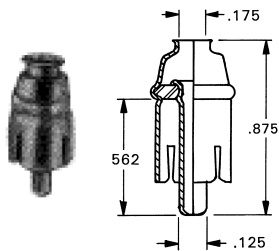
CAT. NO. 7022

## PHONO PLUGS

Mates with 1/8" diameter jacks

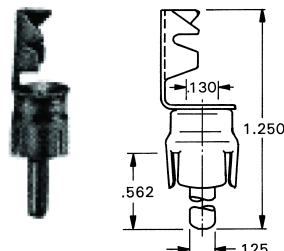
**MATERIAL:** Shell: Steel, Tin Plate Pins: Brass, Nickel Plate

### Longer Skirt for Better Grip



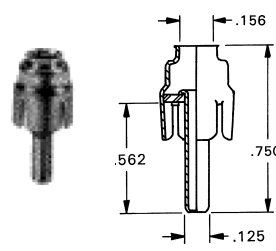
CAT. NO. 566

### Strain Relief Lug Crimps to Wire Insulation



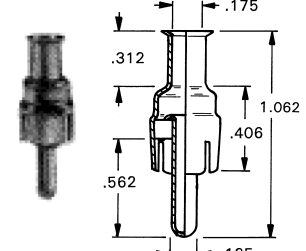
CAT. NO. 565

### Conventional Type



CAT. NO. 561

### Crimp or Solder Type Extra Long Handle



CAT. NO. 567

# BINDING POSTS

Designers' Choice

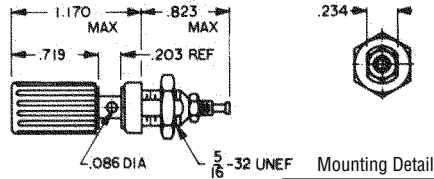
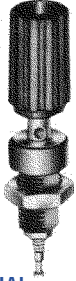


All Keystone binding posts are designed to prevent accidental contact with current carrying parts. They feature a "limited opening" captivated head to insure safety. Ideal for audio circuitry, R.F. Circuitry, oscilloscopes, power supplies and various other applications.

These multi-purpose binding posts feature high current rating, captivated heads and anti-rotation stud mounting.

**NOTE:** Binding Posts accept .175" Banana Plugs, .080" Tip Plugs, Spade Lugs, Alligator Clips, Wires and EZ hooks.

## STANDARD BINDING POST



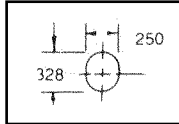
### MATERIAL

Stud: Brass per QQ-B-626  
Finish: Silver Plate  
Insulation: Nylon

### RATINGS

Current: 15 Amps  
Breakdown voltage: 5700 VRMS  
Stud to panel capacitance: 3.3 pF Nominal

Mounting Detail

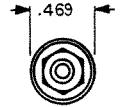
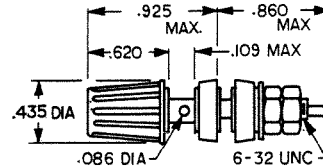


FOR PANELS UP TO .281" THICK

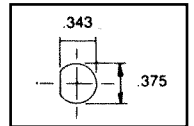
CAT. NO.	COLOR
7004	RED
7005	BLACK

## MINIATURE FLUTED HEAD

Rated 15 Amperes, 1000 VAC Working. Stud: Brass per ASTM B-16 Nylon Insulation. Choice of Gold or Tin Plate.



Mounting Detail



### GOLD PLATE

CAT. NO.	COLOR
7012	RED
7013	BLACK

### TIN PLATE

CAT. NO.	COLOR
7014	RED
7015	BLACK

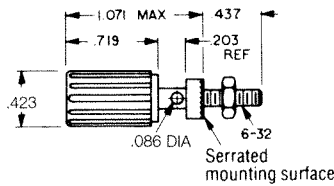
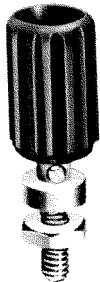
## ECONOMY BINDING POST

Rated 15 Amps, 1000 VAC working.

Stud: Brass per ASTM -B16

Finish: Nickel Plate

Insulation: Nylon

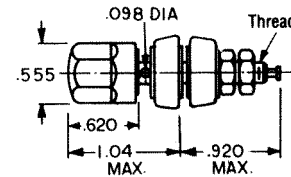


FOR PANELS UP TO .313 THICK

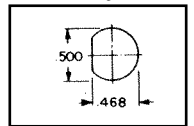
CAT. NO.	COLOR
7006	RED
7007	BLACK

## STANDARD HEX HEAD

Rated 30 Amperes, 1000 VAC Working. Nylon Insulation. Stud: Brass per ASTM B-16. Choice of Gold or Tin Plate.



Mounting Detail



### GOLD PLATE

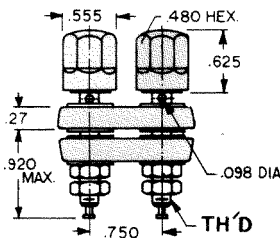
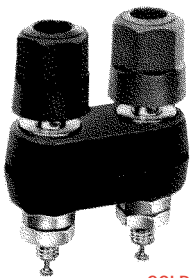
CAT. NO.	TH'D	COLOR
4096	8-32	RED
4097	8-32	BLACK
7016	10-32	RED
7017	10-32	BLACK

### TIN PLATE

CAT. NO.	TH'D	COLOR
4091	8-32	RED
4092	8-32	BLACK
4093	10-32	RED
4094	10-32	BLACK

## STANDARD DUAL HEAD

Rated 30 Amperes, 1000 VAC working. Studs: Brass per ASTM B-16. Nylon Insulation. Mounts in .500 holes on .750 centers. Supplied with: 1 Red-1 Black head. Choice of Gold or Tin Plate.



### GOLD PLATE

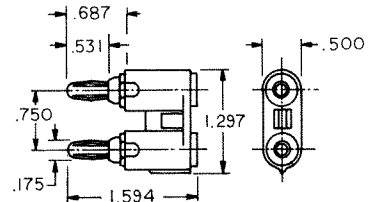
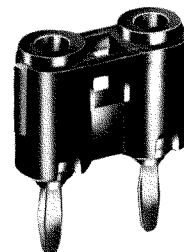
CAT. NO.	THREAD
4108	8-32
4109	10-32

### TIN PLATE

CAT. NO.	THREAD
7018	8-32
7019	10-32

## DUAL BANANA PLUGS

Spring: Nickel Silver. Body: Brass per ASTM B-16. Finish: Nickel Plate. Insulation: Molded Nylon. .750 Mounting Centers. Breakdown: 3500 VRMS



### SOLDERLESS WITH SET SCREW

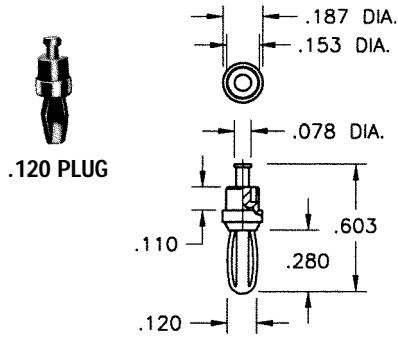
CAT. NO.	COLOR
6088	RED
6089	BLACK



Designers' Choice

# BANANA PLUGS

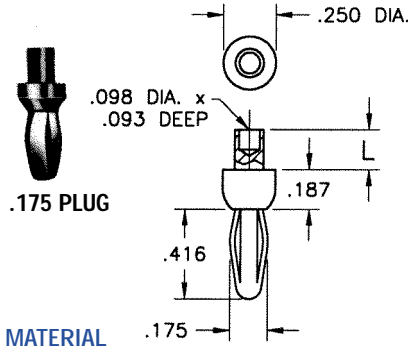
## MINIATURE RIVET



**MATERIAL**  
Spring: Beryllium Copper  
Body: Brass, Silver Plate

CAT. NO. 452

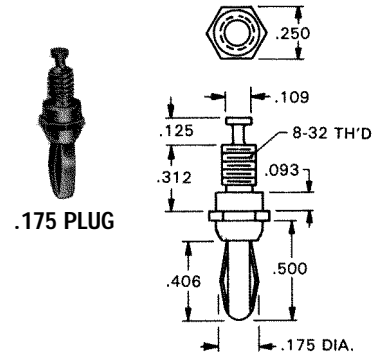
## STANDARD RIVET



**MATERIAL**  
Spring: Beryllium Copper  
Body: Brass, Nickel Plate

CAT. NO.	L
552-3	.187
552-4	.218

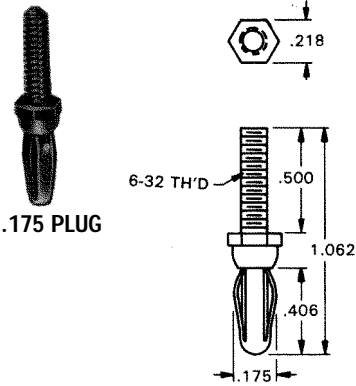
## EXTERNAL THREAD



**MATERIAL**  
Spring: Beryllium Copper  
Body: Brass, Nickel Plate

CAT. NO. 652

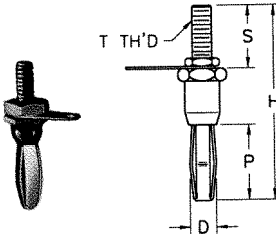
## EXTERNAL THREAD



**MATERIAL**  
Spring: Beryllium Copper  
Body: Brass, Nickel Plate

CAT. NO. 653

## EXTERNAL THREAD

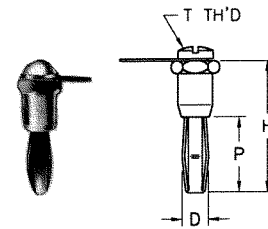


Supplied with lug and nut  
Unassembled

**MATERIAL**  
Spring: Nickel Silver  
Body: Brass, Nickel Plate

CAT. NO.	D	P	H	S	T
6074-1	.175	.531	1 1/8	.375	6-32
6074-2	.175	.531	1 1/2	.750	6-32
6075	.300	.750	1 3/4	.625	1/4-28

## INTERNAL THREAD



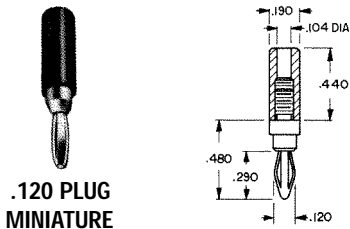
Supplied with screw and lug  
Unassembled

**MATERIAL**  
Spring: Nickel Silver  
Body: Brass, Nickel Plate

CAT. NO.	D	P	H	T
6072	.175	.531	.937	6-32
6073	.300	.750	1.12	10-32

## MINI INSULATED

SOLDER CONNECTION

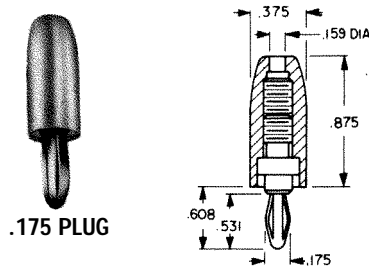


**MATERIAL**  
Spring: Beryllium Copper, Nickel Plate  
Body: Brass, Nickel Plate  
Handle: Nylon

CAT. NO.	COLOR
6076	RED
6077	BLACK

## STANDARD INSULATED

SOLDERLESS CONNECTION

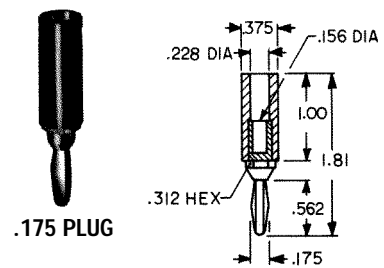


**MATERIAL**  
Spring: Nickel Silver  
Body: Brass, Nickel Plate  
Handle: Nylon

CAT. NO.	COLOR
6078	RED
6079	BLACK

## STANDARD INSULATED

SOLDERLESS CONNECTION



**MATERIAL**  
Spring: Nickel Silver  
Body: Brass, Nickel Plate  
Handle: Nylon

CAT. NO.	COLOR
6082	RED
6083	BLACK

# BANANA PLUGS & JACKS

Designers' Choice

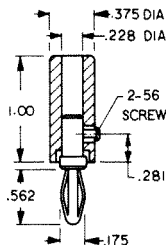


## STD INSULATED PLUG

SOLDERLESS WITH SET SCREW



.175 PLUG



**MATERIAL**

Spring: Nickel Silver  
Body: Brass, Nickel Plate  
Handle: Nylon

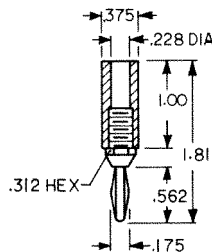
CAT. NO.	COLOR
6084	RED
6085	BLACK

## STD INSULATED PLUG

SOLDER CONNECTION



.175 PLUG



**MATERIAL**

Spring: Nickel Silver  
Body: Brass, Nickel Plate  
Handle: Nylon

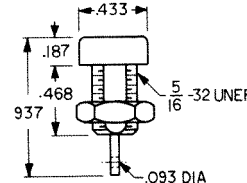
CAT. NO.	COLOR
6080	RED
6081	BLACK

## STD INSULATED JACK

FULLY INSULATED



ACCEPTS .175 PLUG



**MATERIAL**

Body: Nylon  
Contact: Brass, Tin Plate

CAT. NO.	COLOR
6091	RED
6092	BLACK

## STD INSULATED JACK

SOLDER CONNECTION



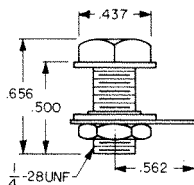
ACCEPTS .175 PLUG

Supplied with lug and nut  
Unassembled

**MATERIAL**

Body: Brass, Nickel Plate  
Terminal: copper, Tinned  
Hex Head: Nylon

CAT. NO.	COLOR
6093	RED
6094	BLACK



## NON-INSULATED JACKS (STAKING)

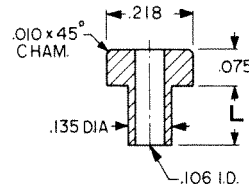
MINIATURE



ACCEPTS .120 PLUG  
MINIATURE

**MATERIAL:** Brass, Tin Plate

CAT. NO.	L
476-2	.125
476-3	.165
476-4	.187



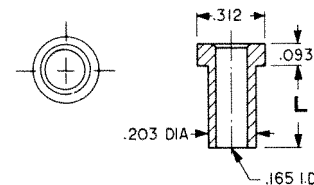
STANDARD



ACCEPTS .175 PLUG

**MATERIAL:** Brass, Nickel Plate

CAT. NO.	L
575-4	.218
575-6	.265
575-8	.350



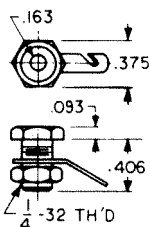
## STANDARD NON-INSULATED JACKS

RECESSED HEAD

Fits panel up to 5/16" thick

Will accept .175 plug. Complete with hex nut and lug. Unassembled.

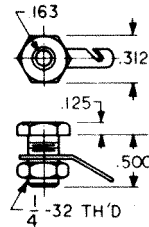
**SPECIFICATIONS:** Body: Brass, Nickel Plate Rating: 15 Amps  
Terminal: Brass, Tin Plate



CAT. NO. 6095

STANDARD HEAD

Fits panel up to 3/8" thick



CAT. NO. 6096

## MINIATURE JACK

NON-INSULATED



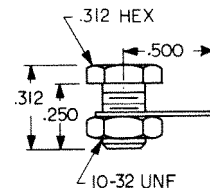
ACCEPTS .120 PLUG

Supplied with lug and nut  
Unassembled

**MATERIAL**

Body: Brass, Nickel Plate  
Terminal: Copper, Tinned

CAT. NO. 6090







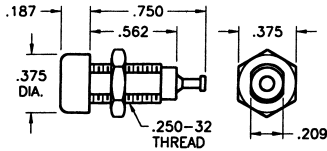
Designers' Choice

# PLUGS & JACKS

## FULLY-INSULATED DELUXE TIP JACK

ACCEPTS .080" TIP (WITH CLOSED ENTRY CONTACT)

Fully molded body with recessed closed entry design. Assures maximum retention with .01Ω maximum contact resistance. Prevents accidental insertion of larger diameter probes. Current rating: 10 Amps. Breakdown voltage 5700 VRMS. Capacitance to metal panel 2.0 pF nominal. Supplied with nut.



SELECTION OF COLORS

CAT. NO.	COLOR
6030	WHITE
6031	RED
6032	BLACK
6033	GREEN
6034	YELLOW
6035	BLUE

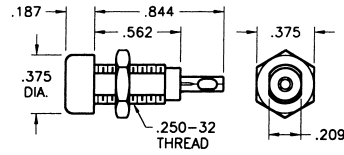
### MATERIAL

Body: Molded Nylon ASTM D4066  
Contact: Beryllium Copper, Silver Plate  
Terminal: Brass, Tin Plate

## FULLY-INSULATED STANDARD TIP JACK

ACCEPTS .080" TIP

Economical tip jacks with molded Nylon body. Low contact resistance. Formed phosphor bronze contact with solder hole for ease in attaching wire. Current rating 10 Amps. Breakdown voltage 5700 VRMS. Capacitance to metal panel 3.8 pF. Supplied with nut.



SELECTION OF COLORS

CAT. NO.	COLOR
6018	WHITE
6019	RED
6020	BLACK
6021	GREEN
6022	YELLOW
6023	BLUE

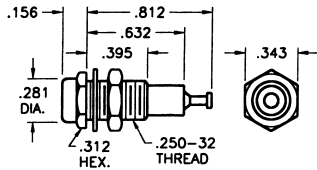
### MATERIAL

Body: Molded Nylon ASTM D4066  
Contact: Phosphor Bronze, Tin Plate

## METAL-CLAD TIP JACK (MIL)

ACCEPTS .080" TIP (WITH CLOSED ENTRY CONTACT)

High quality tip jack for high reliability industrial applications. Ideal for use where required to withstand severe environmental conditions, temperature, vibration and salt spray. Recessed closed entry contact. Current rating: 5 Amps. Breakdown voltage: 5700 VRMS. Made to MS-16108 Rev. F of MIL-STD-242A and MIL-C39024/10. Capacitance to metal panel 2.0 pF. Supplied complete with hardware.



SELECTION OF COLORS

CAT. NO.	COLOR
6012	WHITE
6013	RED
6014	BLACK
6015	GREEN
6016	YELLOW
6017	BLUE

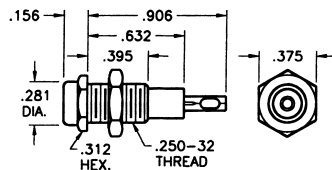
### MATERIAL

Body: Molded Nylon  
ASTM D4066  
Shell & Nut: Brass QQ-B-626  
Nickel Plate QQ-N-290  
Contact: Beryllium Copper  
PER QQ-C-533. Gold Plate  
MIL-G-45204

## METAL-CLAD TIP JACK (STD)

ACCEPTS .080" TIP

Molded Nylon body with metal jacket. Contact is formed from phosphor bronze with solder hole for ease in attaching wire. Designed for positive contact, easy insertion and withdrawal. Current rating: 10 Amps. Breakdown voltage: 5700VRMS. Capacitance to metal panel 3.8 pF. Supplied with nut.



SELECTION OF COLORS

CAT. NO.	COLOR
6024	WHITE
6025	RED
6026	BLACK
6027	GREEN
6028	YELLOW
6029	BLUE

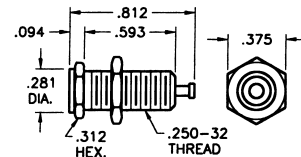
### MATERIAL

Body: Molded Nylon  
ASTM D4066  
Shell: Brass, Nickel Plate  
Contact: Phosphor, Bronze  
Silver Plate

## UNINSULATED TIP JACK

ACCEPTS .080" TIP

Quality, precision machined tip jack made of brass. Ideal for use on metal panels where grounding is required. Fits panels up to 3/8" thk. Complete with hex nut.



### MATERIAL

Body: Brass, Nickel Plate  
Contact: Beryllium Copper  
Rating: 15 Amps

CAT. NO. 6097

## CUSTOM PLUGS & JACKS

Keystone is fully integrated to meet your total design & production needs.

Manufacturing custom designs & modifications of standard items is our specialty.

Quotations on special **Plugs and Jacks** furnished promptly upon receipt of sample, sketch, print or CAD drawings.

# TEST JACKS

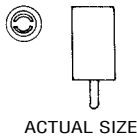
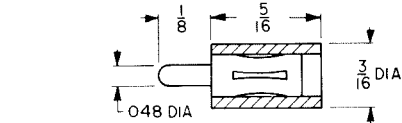
Designers' Choice



## VERTICAL PC TEST JACK

ACCEPTS .080" TIP

This low profile vertical jack allows dense packaging where space is limited. Mounts into a .052" diameter hole. Provides easy access and positive electrical contact. The contact is recessed to prevent accidental shorting. Capacitance between two adjacent jacks less than 1.0 pF at 1 MHz. Operating voltage is 1500 Volts RMS. Current rating 5 Amps max.



ACTUAL SIZE

### SELECTION OF COLORS

CAT. NO.	COLOR
6036	WHITE
6037	RED
6038	BLACK
6039	YELLOW
6040	GREEN
6041	BLUE

### MATERIAL

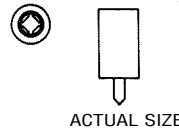
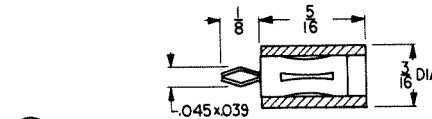
Body: Nylon per ASTM D4066  
Contact: Brass, Silver Plate

## SNAP-IN VERTICAL PC TEST JACK

ACCEPTS .080" TIP

Low cost, compact and dependable snap-in vertical test jack features a unique spring shank which retains the jack throughout wave soldering procedure. Ideal for use on circuit boards of audio, digital and R.F. circuitry. Contact recessed to prevent accidental shorting. Current rating: 5 Amps. Operating voltage 1500 Volts RMS. Capacitance between two adjacent jacks less than 1.0 pF at 1 MHz.

MOUNTING: Snap-fits into .052 hole



ACTUAL SIZE

### SELECTION OF COLORS

CAT. NO.	COLOR
6042	WHITE
6043	RED
6044	BLACK
6045	YELLOW
6046	GREEN
6047	BLUE

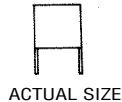
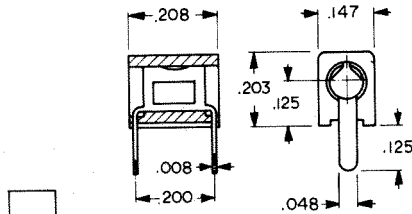
### MATERIAL

Body: Nylon per ASTM D4066  
Contact: Beryllium Copper, Silver Plate

## MINIATURE HORIZONTAL PC TEST JACK

ACCEPTS .080" TIP

Space saver test jack designed for use where space is a limiting factor. Half the size of standard jacks. Accepts .080" tip plug in either end. Mounts on .200" centers in .052" holes. Can be spaced side by side on .160" centers minimum. Two common terminals. Current: 5 Amps. Breakdown voltage: 2100 VRMS, Capacitance 1.0 pF maximum.



ACTUAL SIZE

### SELECTION OF COLORS

CAT. NO.	COLOR
6048	WHITE
6049	RED
6050	BLACK
6051	YELLOW
6052	GREEN
6053	BLUE

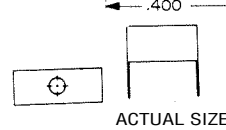
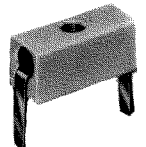
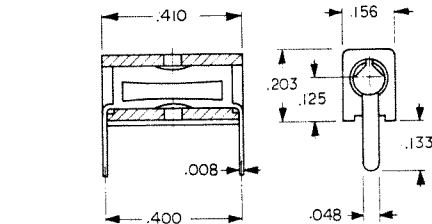
### MATERIAL

Body: Nylon per ASTM D4066  
Contact: Beryllium Copper Silver Plate

## UNIVERSAL HORIZONTAL PC TEST JACK

ACCEPTS .080" TIP

This universal design accepts .080" tip plug in either end, or from top or bottom. Top contact will also accept hook-type oscilloscope probe. Two common terminals. Current rating: 5 Amps. Breakdown voltage: 2100 VRMS. Capacitance 1.0 pF maximum. Mounts on .400" centers in .052" holes. Side by side mounting on .160" centers.



ACTUAL SIZE

### SELECTION OF COLORS

CAT. NO.	COLOR
6054	WHITE
6055	RED
6056	BLACK
6057	YELLOW
6058	GREEN
6059	BLUE

### MATERIAL

Body: Nylon per ASTM D4066  
Contact: Beryllium Copper Silver Plate

## LOW PROFILE HORIZONTAL PC TEST JACK

ACCEPTS .080" TIP

This low profile double-entry design is recognized for its dependability, and allows dense packaging on .160" centers. Side by side mounting. Closed entry design for use with .074 to .084 dia. tips. Reliability is designed into this rugged low cost jack. Mounts on .400" centers in .052" holes. Current rating: 5 Amps. Breakdown voltage 2100 VRMS. Contact resistance .010Ω maximum.

### MATERIAL

Body: Nylon per ASTM D4066  
Contact: Beryllium Copper, Silver or Gold Plate

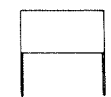
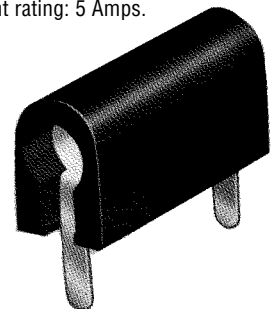
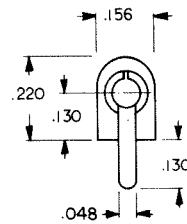
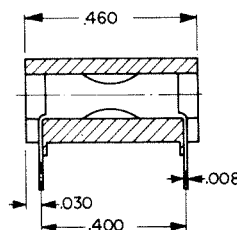
### Choice of Gold or Silver Plate Contacts

WITH GOLD PLATING  
SELECTION OF COLORS

CAT. NO.	COLOR
6060	WHITE
6061	RED
6062	BLACK
6063	YELLOW
6064	GREEN
6065	BLUE

WITH SILVER PLATING  
SELECTION OF COLORS

CAT. NO.	COLOR
6066	WHITE
6067	RED
6068	BLACK
6069	YELLOW
6070	GREEN
6071	BLUE



ACTUAL SIZE



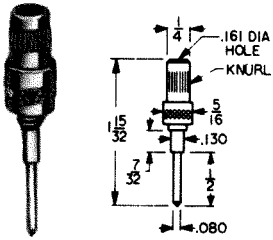
Designers' Choice

# TEST TIPS & PLUGS

**SPECIFICATIONS:** Tips: Brass, Nickel Plate  
 Handles: Nylon 6/6, Available in Red or Black  
 Rating: 10 Amps AC for 100° C temperature rise, continuous duty

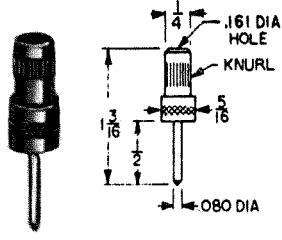
## FORCE FIT SOLDERLESS TIPS

SENIOR



CAT. NO. 1690

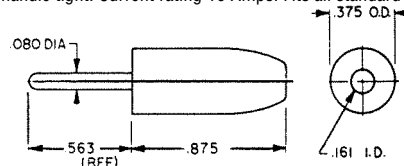
JUNIOR



CAT. NO. 1680

## SOLDERLESS - .080 DIA. TIP PLUGS

Fully insulated molded nylon sleeve. Maximum reliability with minimum contact resistance. Recessed metal head eliminates possibility of shock or grounding. Designed for solderless connection of up to 16 gauge stranded wire which fits through handle and tip and is secured by screwing handle tight. Current rating 10 Amps. Fits all standard tip jacks.

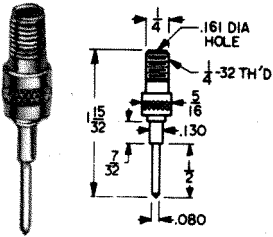


SELECTION OF COLORS

CAT. NO.	COLOR	CAT. NO.	COLOR
6000	WHITE	6003	GREEN
6001	RED	6004	YELLOW
6002	BLACK	6005	BLUE

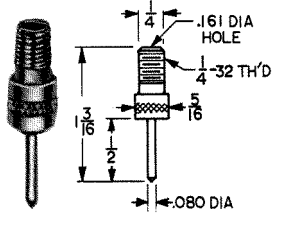
## THREADED SOLDERLESS TIP

SENIOR



CAT. NO. 1691

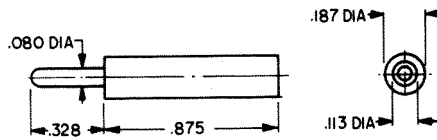
JUNIOR



CAT. NO. 1681

## MINIATURE - .080 DIA. TIP PLUGS

Designed for miniaturization where space is critical. Solder lead connection. Maximum reliability with minimum contact resistance. Base of tip is recessed to eliminate shock or grounding. Fits horizontal tip jacks. Current rating: 10 Amps.

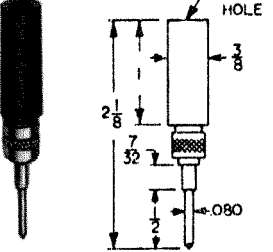


SELECTION OF COLORS

CAT. NO.	COLOR	CAT. NO.	COLOR
6006	WHITE	6009	GREEN
6007	RED	6010	YELLOW
6008	BLACK	6011	BLUE

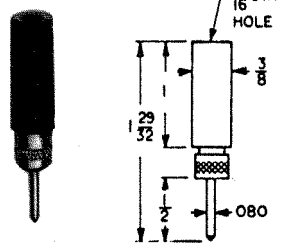
## INSULATED SOLDERLESS TIP

SENIOR



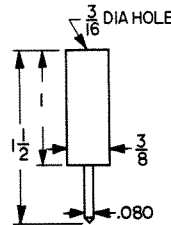
CAT. NO. 1660- RED  
 CAT. NO. 1661- BLACK

JUNIOR

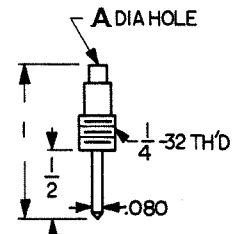


CAT. NO. 1670- RED  
 CAT. NO. 1671- BLACK

## STREAMLINE TIPS

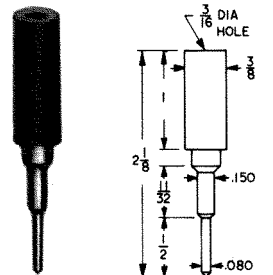


CAT. NO. 1615 - RED  
 CAT. NO. 1616 - BLACK



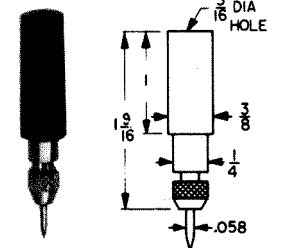
CAT. NO.	A
3022-12	.120
3022-20	.093

## HEAVY DUTY



CAT. NO. 3017 - RED  
 CAT. NO. 3018 - BLACK  
 CAT. NO. 3019 - TIP ONLY

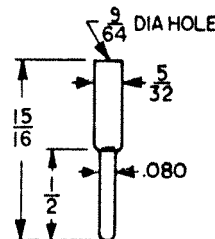
## NEEDLE TIPS



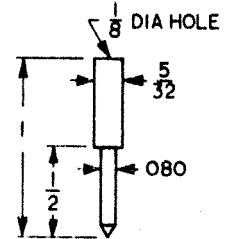
CAT. NO. 3015 - RED  
 CAT. NO. 3016 - BLACK  
 CAT. NO. 3014 - TIP ONLY

## STANDARD PHONE TIPS

Ideal for replacement tip for headset, speaker, or extension cord. Cat. No. 1601 Tip accommodates heavier wire.



CAT. NO. 1600



CAT. NO. 1601





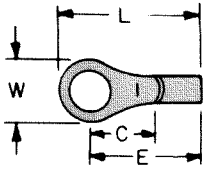
Designers' Choice

# SOLDERLESS TERMINALS

Solderless Terminals are made of pure electrolytic (ETP) cooper and tin plated. Insulation is color coded vinyl.

## RING TONGUE BUTTED SEAM

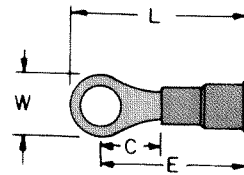
NON-INSULATED



Hand Crimp Tool  
CAT. NO. 1345

CAT. NO.	WIRE RANGE (AWG)	FOR STUD SIZE	W	C	L	E	THK	BARREL	
								LENGTH	I.D.
8200	22/18	6	.25	.22	.60	.47	.030	.25	.070
8201		8	.33	.29	.70	.54	.030	.25	.070
8202		10	.33	.29	.70	.54	.030	.25	.070
8203	16/14	6	.25	.22	.60	.47	.030	.25	.090
8204		8	.33	.29	.70	.54	.030	.25	.090
8205		10	.33	.29	.70	.54	.030	.25	.090
8206	12/10	6	.28	.29	.68	.54	.040	.25	.135
8207		8	.38	.29	.73	.54	.040	.25	.135
8208		10	.38	.29	.73	.54	.040	.25	.135

VINYL INSULATED

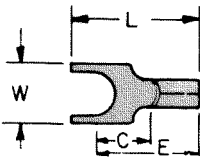


Hand Crimp Tool  
CAT. NO. 1345

CAT. NO.	WIRE RANGE (AWG)	FOR STUD SIZE	W	C	L	E	THK	BARREL		MAX. INSUL. DIA.
								LENGTH	I.D.	
8209	22/18 (Red)	6	.25	.22	.80	.67	.030	.25	.070	.145
8210		8	.33	.29	.90	.74	.030	.25	.070	.145
8211		10	.33	.29	.90	.74	.030	.25	.070	.145
8212	16/14 (Blue)	6	.25	.22	.80	.67	.030	.25	.090	.170
8213		8	.33	.29	.90	.74	.030	.25	.090	.170
8214		10	.33	.29	.90	.74	.030	.25	.090	.170
8215	12/10 (Yellow)	6	.28	.29	.98	.84	.040	.25	.135	.250
8216		8	.38	.29	1.03	.84	.040	.25	.135	.250
8217		10	.38	.29	1.03	.84	.040	.25	.135	.250

## BLOCK SPADE BUTTED SEAM

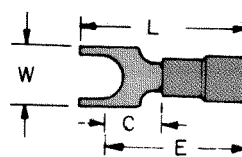
NON-INSULATED



Hand Crimp Tool  
CAT. NO. 1345

CAT. NO.	WIRE RANGE (AWG)	FOR STUD SIZE	W	C	L	E	THK	BARREL	
								LENGTH	I.D.
8218	22/18	6	.30	.25	.65	.50	.030	.25	.070
8219		8	.30	.25	.65	.50	.030	.25	.070
8220		10	.30	.25	.65	.50	.030	.25	.070
8221	16/14	6	.30	.25	.65	.50	.030	.25	.090
8222		8	.30	.25	.65	.50	.030	.25	.090
8223		10	.30	.25	.65	.50	.030	.25	.090
8224	12/10	6	.32	.29	.73	.54	.040	.25	.135
8225		8	.32	.29	.73	.54	.040	.25	.135
8226		10	.32	.29	.73	.54	.040	.25	.135

VINYL INSULATED

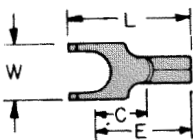


Hand Crimp Tool  
CAT. NO. 1345

CAT. NO.	WIRE RANGE (AWG)	FOR STUD SIZE	W	C	L	E	THK	BARREL		MAX. INSUL. DIA.
								LENGTH	I.D.	
8227	22/18 (Red)	6	.30	.25	.85	.70	.030	.25	.070	.145
8228		8	.30	.25	.85	.70	.030	.25	.070	.145
8229		10	.30	.25	.85	.70	.030	.25	.070	.145
8230	16/14 (Blue)	6	.30	.25	.85	.70	.030	.25	.090	.175
8231		8	.30	.25	.85	.70	.030	.25	.090	.175
8232		10	.30	.25	.85	.70	.030	.25	.090	.175
8233	12/10 (Yellow)	6	.32	.29	1.03	.84	.040	.25	.135	.255
8234		8	.32	.29	1.03	.84	.040	.25	.135	.255
8235		10	.32	.29	1.03	.84	.040	.25	.135	.255

## FLANGED BLOCK SPADE BUTTED SEAM

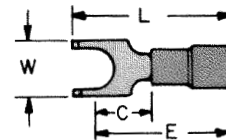
NON-INSULATED



Hand Crimp Tool  
CAT. NO. 1345

CAT. NO.	WIRE RANGE (AWG)	FOR STUD SIZE	W	C	L	E	THK	BARREL	
								LENGTH	I.D.
8236	22/18	6	.30	.25	.65	.50	.030	.25	.070
8237		8	.30	.25	.65	.50	.030	.25	.070
8238		10	.30	.25	.65	.50	.030	.25	.070
8239	16/14	6	.30	.25	.65	.50	.030	.25	.090
8240		8	.30	.25	.65	.50	.030	.25	.090
8241		10	.30	.25	.65	.50	.030	.25	.090
8242	12/10	6	.32	.29	.73	.54	.040	.25	.135
8243		8	.32	.29	.73	.54	.040	.25	.135
8244		10	.32	.29	.73	.54	.040	.25	.135

VINYL INSULATED



Hand Crimp Tool  
CAT. NO. 1345

CAT. NO.	WIRE RANGE (AWG)	FOR STUD SIZE	W	C	L	E	THK	BARREL		MAX. INSUL. DIA.
								LENGTH	I.D.	
8245	22/18 (Red)	6	.30	.25	.85	.70	.030	.25	.070	.145
8246		8	.30	.25	.85	.70	.030	.25	.070	.145
8247		10	.30	.25	.85	.70	.030	.25	.070	.145
8248	16/14 (Blue)	6	.30	.25	.85	.70	.030	.25	.090	.170
8249		8	.30	.25	.85	.70	.030	.25	.090	.170
8250		10	.30	.25	.85	.70	.030	.25	.090	.170
8251	12/10 (Yellow)	6	.32	.29	1.03	.84	.040	.25	.135	.250
8252		8	.32	.29	1.03	.84	.040	.25	.135	.250
8253		10	.32	.29	1.03	.84	.040	.25	.135	.250

# SOLDERLESS TERMINALS

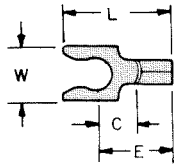
Designers' Choice



Solderless terminals are made of pure electrolytic (ETP) copper annealed and tin plated. Insulation is color coded vinyl.

## SNAP-SPACE BUTTED SEAM

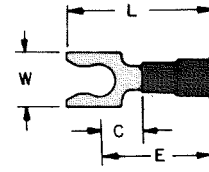
NON-INSULATED



Hand Crimp Tool  
CAT. NO. 1345

CAT. NO.	WIRE RANGE (AWG)	FOR STUD SIZE	W	C	L	E	THK	BARREL	
								LENGTH	I.D.
8254	22/18	6	.25	.25	.68	.50	.030	.25	.070
8255		8	.30	.25	.68	.50	.030	.25	.070
8256		10	.32	.25	.68	.50	.030	.25	.070
8257	16/14	6	.25	.25	.68	.50	.030	.25	.090
8258		8	.30	.25	.68	.50	.030	.25	.090
8259		10	.32	.25	.68	.50	.030	.25	.135
8260	12/10	6	.28	.28	.73	.53	.040	.25	.135
8261		8	.32	.28	.73	.53	.040	.25	.135
8262		10	.32	.28	.73	.53	.040	.25	.135

VINYL-INSULATED

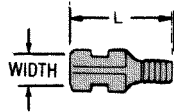


Hand Crimp Tool  
CAT. NO. 1345

CAT. NO.	WIRE RANGE (AWG)	FOR STUD SIZE	W	C	L	E	THK	BARREL		MAX INSUL. DIA.
								LENGTH	I.D.	
8263	22/18 (Red)	6	.25	.25	.88	.70	.030	.25	.070	.145
8264		8	.30	.25	.88	.70	.030	.25	.070	.145
8265		10	.32	.25	.88	.70	.030	.25	.070	.145
8266	16/14 (Blue)	6	.25	.25	.88	.70	.030	.25	.090	.170
8267		8	.30	.25	.88	.70	.030	.25	.090	.170
8268		10	.32	.25	.88	.70	.030	.25	.090	.170
8269	12/10 (Yellow)	6	.28	.28	1.03	.83	.040	.25	.135	.250
8270		8	.32	.28	1.03	.83	.040	.25	.135	.250
8271		10	.32	.28	1.03	.83	.040	.25	.135	.250

## QUICK SLIDE BUTTED SEAM

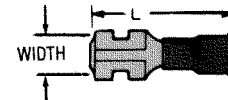
FEMALE NON-INSULATED



Hand Crimp Tool  
CAT. NO. 1345

CAT. NO.	WIRE RANGE (AWG)	MATES WITH MALE TAB WIDTH x THK	L	BARREL	
				LENGTH	I.D.
8272	22/18	.187 x .020	.58	.25	.085
8273		.250 x .032	.66	.25	.080
8274		.187 x .020	.58	.25	.085
8275	16/14	.250 x .032	.66	.25	.080

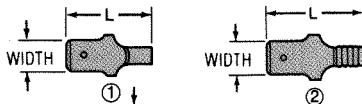
FEMALE VINYL INSULATED



Hand Crimp Tool  
CAT. NO. 1345

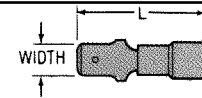
CAT. NO.	WIRE RANGE (AWG)	MATES WITH MALE TAB WIDTH x THK	L	BARREL		MAX INSUL. DIA.
				LENGTH	I.D.	
8276	22/18 (Red)	.187 x .020	.78	.25	.085	.145
8277		.250 x .032	.87	.25	.080	.145
8278	16/14 (Blue)	.187 x .020	.78	.25	.085	.145
8279		.250 x .032	.87	.25	.080	.145
8280	12/10 (Yellow)	.250 x .032	.96	.25	.165	.250

MALE NON-INSULATED



CAT. NO.	WIRE RANGE (AWG)	MALE TAB WIDTH x THK	L	BARREL	
				LENGTH	I.D.
8281	22/18	.187 x .020	.64	.24	.080
8282		.250 x .032	.73	.25	.065
8283	16/14	.187 x .020	.64	.24	.080
8284		.250 x .032	.73	.25	.085
8285	12/10	.250 x .032	.75	.25	.150

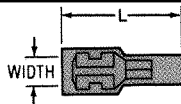
MALE VINYL INSULATED



Hand Crimp Tool  
CAT. NO. 1345

CAT. NO.	WIRE RANGE (AWG)	MALE TAB WIDTH x THK	L	BARREL		MAX INSUL. DIA.
				LENGTH	I.D.	
8286	22/18 (Red)	.187 x .020	.85	.24	.080	.145
8287		.250 x .032	.93	.25	.065	.145
8288	16/14 (Blue)	.187 x .020	.85	.24	.080	.145
8289		.250 x .032	.93	.25	.085	.170
8290	12/10 (Yellow)	.250 x .032	1.05	.25	.150	.250

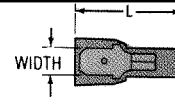
FEMALE FULLY INSULATED NYLON



Hand Crimp Tool  
CAT. NO. 1345

CAT. NO.	WIRE RANGE (AWG)	MATES WITH MALE TAB WIDTH x THK	L	W	D	BARREL		MAX INSUL. DIA.
						LENGTH	I.D.	
8291	22/18 (Red)	.187 x .020	.81	.30	.23	.25	.085	.145
8292		.250 x .032	.87	.37	.23	.25	.080	.145
8293	16/14 (Blue)	.187 x .020	.81	.30	.23	.25	.085	.145
8294		.250 x .032	.87	.37	.23	.25	.080	.170
8295	12/10 (Yellow)	.250 x .032	.99	.39	.32	.25	.165	.250

MALE FULLY INSULATED NYLON



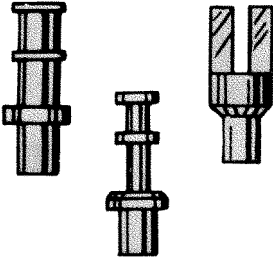
Hand Crimp Tool  
CAT. NO. 1345

CAT. NO.	WIRE RANGE (AWG)	MALE TAB WIDTH x THK	L	W	D	BARREL		MAX INSUL. DIA.
						LENGTH	I.D.	
8296	22/18 (Red)	.187 x .020	.87	.37	.30	.24	.080	.145
8297		.250 x .032	.95	.44	.30	.25	.065	.145
8298	16/14 (Blue)	.187 x .020	.87	.37	.30	.24	.080	.170
8299		.250 x .032	.95	.44	.30	.25	.085	.170
8300	12/10 (Yellow)	.250 x .032	1.05	.47	.39	.25	.150	.250



Designers' Choice

# STANDARDIZED TERMINALS



### STYLES

- Single, double and triple turrets
- Double-ended (feed thru)
- Split-type (fork)
- Tubular (hollow)
- Swage and thread mounting types available
- Bright Tin plated for extended shelf life and excellent solderability
- Wide variety of sizes to suit space and wire requirements

### ORDERING INFORMATION

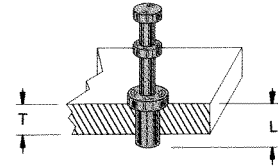
Keystone standardized terminals are available for various board thicknesses.

To specify a terminal, select the "CAT. NO." and "DASH NUMBER" that corresponds with the board thickness to be used.

### DASH NUMBERS ('T' Dimension)

- 1 for .032 Thick Board
- 2 for .062 Thick Board
- 3 for .093 Thick Board
- 4 for .125 Thick Board

Example: 1503-1 for .032 Thick Board  
1503-2 for .062 Thick Board



### SPECIFICATIONS

**Material:** Free Cutting Brass - ASTM-B16

**Plating:** Bright Electro-Tin per MIL-T10727 Type 1. Other platings available upon request (Silver, Gold, Tin/Lead, Hot Tin Dip).

### SPECIAL TERMINALS

Custom terminals can be manufactured to your specifications. Complete facilities available to meet your production requirements. Quotations on special terminals furnished promptly upon receipt of sample, sketch or print.

### CUSTOM BUILT TERMINAL BOARDS

We are specialists in the assembly of terminals, eyelets, clips and special hardware. Quotations on special terminal boards furnished promptly upon receipt of sample, sketch or print. Assembly service using customer supplied materials also available. (See pages 97-101 for standard terminal boards.)

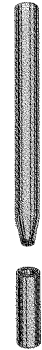
### STAKING TOOLS

For easy mounting of terminals to insulators and PC boards. Standard and "special order" staking tools are available.

Cat. No. "TL" designates a tool consisting of a TOP STAKING PUNCH and a BOTTOM ANVIL. Manufactured from steel with zinc plate. Punch and anvil are precision machined and hardened to insure long life.

### CUSTOM STAKING TOOLS

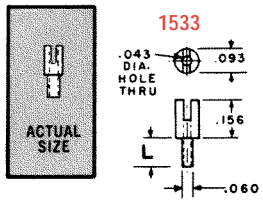
Custom prototype and production staking tools can be furnished for Single-End, Double-End, Fork Terminals, Extruded Lugs, Eyelets, Rivets, etc. Contact our engineering department for details.



<p><b>SINGLE DOUBLE &amp; TRIPLE TURRET SERIES</b></p>	<p><b>1508</b></p> <table border="1"> <thead> <tr> <th>CAT. NO.</th> <th>L</th> <th>T</th> </tr> </thead> <tbody> <tr> <td>1508-1</td> <td>.053</td> <td>.032</td> </tr> <tr> <td>1508-2</td> <td>.084</td> <td>.062</td> </tr> <tr> <td>1508-3</td> <td>.115</td> <td>.093</td> </tr> <tr> <td>1508-4</td> <td>.147</td> <td>.125</td> </tr> </tbody> </table> <p>STAKING TOOL NO. TL-1</p>	CAT. NO.	L	T	1508-1	.053	.032	1508-2	.084	.062	1508-3	.115	.093	1508-4	.147	.125	<p><b>1528</b></p> <table border="1"> <thead> <tr> <th>CAT. NO.</th> <th>L</th> <th>T</th> </tr> </thead> <tbody> <tr> <td>1528-1</td> <td>.051</td> <td>.032</td> </tr> <tr> <td>1528-2</td> <td>.082</td> <td>.062</td> </tr> <tr> <td>1528-3</td> <td>.113</td> <td>.093</td> </tr> <tr> <td>1528-4</td> <td>.145</td> <td>.125</td> </tr> </tbody> </table> <p>STAKING TOOL NO. Special Order</p>	CAT. NO.	L	T	1528-1	.051	.032	1528-2	.082	.062	1528-3	.113	.093	1528-4	.145	.125	<p><b>1572</b></p> <table border="1"> <thead> <tr> <th>CAT. NO.</th> <th>L</th> <th>T</th> </tr> </thead> <tbody> <tr> <td>1572-1</td> <td>.051</td> <td>.032</td> </tr> <tr> <td>1572-2</td> <td>.082</td> <td>.062</td> </tr> <tr> <td>1572-3</td> <td>.113</td> <td>.093</td> </tr> <tr> <td>1572-4</td> <td>.145</td> <td>.125</td> </tr> </tbody> </table> <p>STAKING TOOL NO. TL-1</p>	CAT. NO.	L	T	1572-1	.051	.032	1572-2	.082	.062	1572-3	.113	.093	1572-4	.145	.125	<p><b>1520</b></p> <table border="1"> <thead> <tr> <th>CAT. NO.</th> <th>L</th> <th>T</th> </tr> </thead> <tbody> <tr> <td>1520-1</td> <td>.078</td> <td>.032</td> </tr> <tr> <td>1520-2</td> <td>.109</td> <td>.062</td> </tr> <tr> <td>1520-3</td> <td>.141</td> <td>.093</td> </tr> <tr> <td>1520-4</td> <td>.172</td> <td>.125</td> </tr> </tbody> </table> <p>STAKING TOOL NO. TL-2</p>	CAT. NO.	L	T	1520-1	.078	.032	1520-2	.109	.062	1520-3	.141	.093	1520-4	.172	.125															
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<p><b>1532</b></p> <table border="1"> <thead> <tr> <th>CAT. NO.</th> <th>L</th> <th>T</th> </tr> </thead> <tbody> <tr> <td>1532-1</td> <td>.078</td> <td>.032</td> </tr> <tr> <td>1532-2</td> <td>.109</td> <td>.062</td> </tr> <tr> <td>1532-3</td> <td>.141</td> <td>.093</td> </tr> <tr> <td>1532-4</td> <td>.172</td> <td>.125</td> </tr> </tbody> </table> <p>STAKING TOOL NO. TL-8</p>	CAT. NO.	L	T	1532-1	.078	.032	1532-2	.109	.062	1532-3	.141	.093	1532-4	.172	.125	<p><b>1593</b></p> <table border="1"> <thead> <tr> <th>CAT. NO.</th> <th>L</th> <th>T</th> </tr> </thead> <tbody> <tr> <td>1593-1</td> <td>.053</td> <td>.032</td> </tr> <tr> <td>1593-2</td> <td>.084</td> <td>.062</td> </tr> <tr> <td>1593-3</td> <td>.115</td> <td>.093</td> </tr> <tr> <td>1593-4</td> <td>.147</td> <td>.125</td> </tr> </tbody> </table> <p>STAKING TOOL NO. TL-1</p>	CAT. NO.	L	T	1593-1	.053	.032	1593-2	.084	.062	1593-3	.115	.093	1593-4	.147	.125	<p><b>1573</b></p> <table border="1"> <thead> <tr> <th>CAT. NO.</th> <th>L</th> <th>T</th> </tr> </thead> <tbody> <tr> <td>1573-1</td> <td>.051</td> <td>.032</td> </tr> <tr> <td>1573-2</td> <td>.082</td> <td>.062</td> </tr> <tr> <td>1573-3</td> <td>.113</td> <td>.093</td> </tr> <tr> <td>1573-4</td> <td>.145</td> <td>.125</td> </tr> </tbody> </table> <p>STAKING TOOL NO. TL-1</p>	CAT. NO.	L	T	1573-1	.051	.032	1573-2	.082	.062	1573-3	.113	.093	1573-4	.145	.125	<p><b>1502</b></p> <table border="1"> <thead> <tr> <th>CAT. NO.</th> <th>L</th> <th>T</th> </tr> </thead> <tbody> <tr> <td>1502-1</td> <td>.078</td> <td>.032</td> </tr> <tr> <td>1502-2</td> <td>.109</td> <td>.062</td> </tr> <tr> <td>1502-3</td> <td>.141</td> <td>.093</td> </tr> <tr> <td>1502-4</td> <td>.172</td> <td>.125</td> </tr> </tbody> </table> <p>STAKING TOOL NO. TL-2</p>	CAT. NO.	L	T	1502-1	.078	.032	1502-2	.109	.062	1502-3	.141	.093	1502-4	.172	.125	<p><b>1514</b></p> <table border="1"> <thead> <tr> <th>CAT. NO.</th> <th>L</th> <th>T</th> </tr> </thead> <tbody> <tr> <td>1514-1</td> <td>.078</td> <td>.032</td> </tr> <tr> <td>1514-2</td> <td>.109</td> <td>.062</td> </tr> <tr> <td>1514-3</td> <td>.141</td> <td>.093</td> </tr> <tr> <td>1514-4</td> <td>.172</td> <td>.125</td> </tr> </tbody> </table> <p>STAKING TOOL NO. TL-5</p>	CAT. NO.	L	T	1514-1	.078	.032	1514-2	.109	.062	1514-3	.141	.093	1514-4	.172	.125
CAT. NO.	L	T																																																																													
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1514-4	.172	.125																																																																													
<p><b>1503</b></p> <table border="1"> <thead> <tr> <th>CAT. NO.</th> <th>L</th> <th>T</th> </tr> </thead> <tbody> <tr> <td>1503-1</td> <td>.078</td> <td>.032</td> </tr> <tr> <td>1503-2</td> <td>.109</td> <td>.062</td> </tr> <tr> <td>1503-3</td> <td>.141</td> <td>.093</td> </tr> <tr> <td>1503-4</td> <td>.172</td> <td>.125</td> </tr> </tbody> </table> <p>STAKING TOOL NO. TL-8</p>	CAT. NO.	L	T	1503-1	.078	.032	1503-2	.109	.062	1503-3	.141	.093	1503-4	.172	.125	<p><b>1598</b></p> <table border="1"> <thead> <tr> <th>CAT. NO.</th> <th>L</th> <th>T</th> </tr> </thead> <tbody> <tr> <td>1598-1</td> <td>.062</td> <td>.032</td> </tr> <tr> <td>1598-2</td> <td>.094</td> <td>.062</td> </tr> <tr> <td>1598-3</td> <td>.125</td> <td>.093</td> </tr> <tr> <td>1598-4</td> <td>.156</td> <td>.125</td> </tr> </tbody> </table> <p>STAKING TOOL NO. TL-2</p>	CAT. NO.	L	T	1598-1	.062	.032	1598-2	.094	.062	1598-3	.125	.093	1598-4	.156	.125	<p><b>1527</b></p> <table border="1"> <thead> <tr> <th>CAT. NO.</th> <th>L</th> <th>T</th> </tr> </thead> <tbody> <tr> <td>1527-1</td> <td>.078</td> <td>.032</td> </tr> <tr> <td>1527-2</td> <td>.109</td> <td>.062</td> </tr> <tr> <td>1527-3</td> <td>.141</td> <td>.093</td> </tr> <tr> <td>1527-4</td> <td>.172</td> <td>.125</td> </tr> </tbody> </table> <p>STAKING TOOL NO. TL-8</p>	CAT. NO.	L	T	1527-1	.078	.032	1527-2	.109	.062	1527-3	.141	.093	1527-4	.172	.125	<p><b>SPLIT-TYPE (FORK) SERIES</b></p>	<p><b>1515</b></p> <table border="1"> <thead> <tr> <th>CAT. NO.</th> <th>L</th> <th>T</th> </tr> </thead> <tbody> <tr> <td>1515-1</td> <td>.051</td> <td>.032</td> </tr> <tr> <td>1515-2</td> <td>.082</td> <td>.062</td> </tr> <tr> <td>1515-3</td> <td>.113</td> <td>.093</td> </tr> <tr> <td>1515-4</td> <td>.145</td> <td>.125</td> </tr> </tbody> </table> <p>STAKING TOOL NO. Special Order</p>	CAT. NO.	L	T	1515-1	.051	.032	1515-2	.082	.062	1515-3	.113	.093	1515-4	.145	.125															
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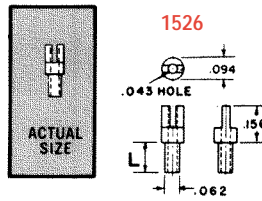
# STANDARDIZED TERMINALS

Designers' Choice



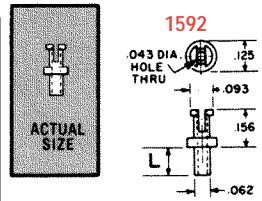
CAT. NO.	L	T
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1533-3	.115	.093
1533-4	.147	.125

STAKING TOOL NO. Special Order



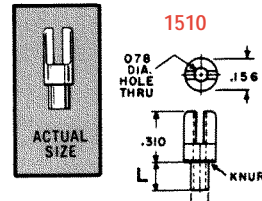
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1526-3	.115	.093
1526-4	.147	.125

STAKING TOOL NO. TL-3



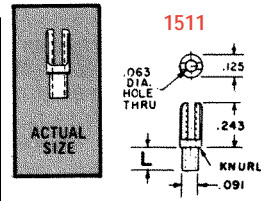
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1592-4	.145	.125

STAKING TOOL NO. TL-3



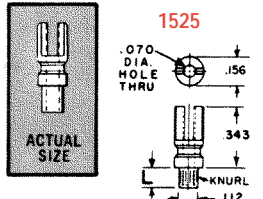
CAT. NO.	L	T
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1510-4	.172	.125

STAKING TOOL NO. TL-9



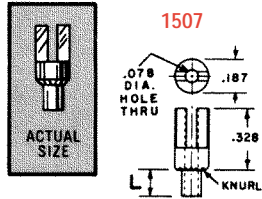
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1511-3	.141	.093
1511-4	.172	.125

STAKING TOOL NO. TL-3



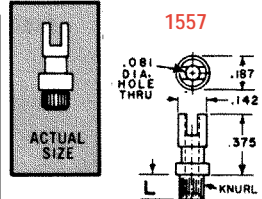
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1525-3	.141	.093
1525-4	.172	.125

STAKING TOOL NO. TL-9



CAT. NO.	L	T
1507-1	.078	.032
1507-2	.109	.062
1507-3	.141	.093
1507-4	.172	.125

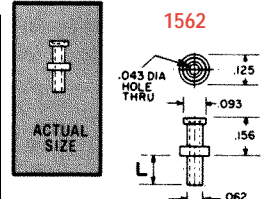
STAKING TOOL NO. TL-9



CAT. NO.	L	T
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1557-3	.141	.093
1557-4	.172	.125

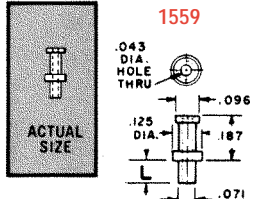
STAKING TOOL NO. Special Order

TUBULAR (HOLLOW) AND DOUBLE-ENDED (FEED THRU) TURRET SERIES



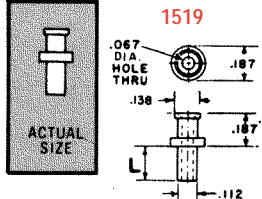
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1562-4	.147	.125

STAKING TOOL NO. TL-2



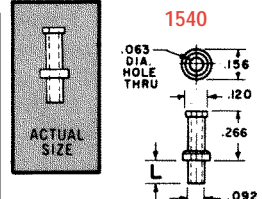
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1559-3	.125	.093
1559-4	.156	.125

STAKING TOOL NO. TL-2



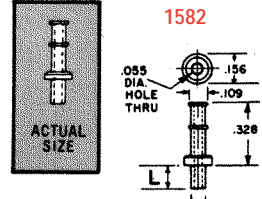
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1519-2	.109	.062
1519-3	.141	.093
1519-4	.172	.125

STAKING TOOL NO. TL-8



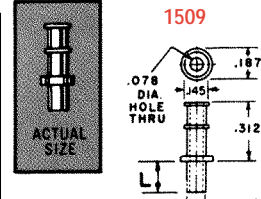
CAT. NO.	L	T
1540-2	.109	.062
1540-3	.141	.093
1540-4	.172	.125

STAKING TOOL NO. TL-5



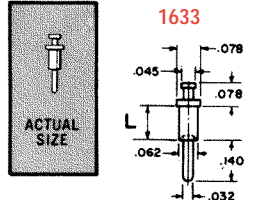
CAT. NO.	L	T
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1582-2	.105	.062
1582-3	.135	.093
1582-4	.165	.125

STAKING TOOL NO. TL-5



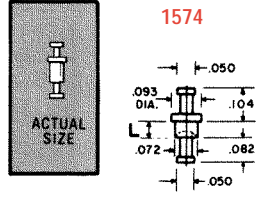
CAT. NO.	L	T
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1509-4	.172	.125

STAKING TOOL NO. TL-8



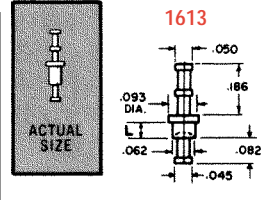
CAT. NO.	L	T
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1633-2	.082	.062
1633-3	.113	.093
1633-4	.145	.125

STAKING TOOL NO. Special Order



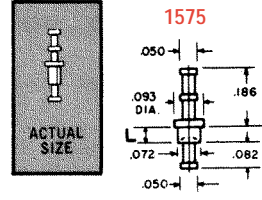
CAT. NO.	L	T
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1574-2	.082	.062
1574-3	.113	.093
1574-4	.145	.125

STAKING TOOL NO. TL-4



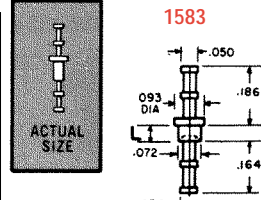
CAT. NO.	L	T
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1613-4	.145	.125

STAKING TOOL NO. TL-4



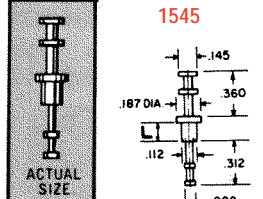
CAT. NO.	L	T
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1575-2	.082	.062
1575-3	.113	.093
1575-4	.145	.125

STAKING TOOL NO. TL-4



CAT. NO.	L	T
1583-1	.051	.032
1583-2	.082	.062
1583-3	.113	.093
1583-4	.145	.125

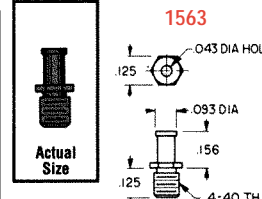
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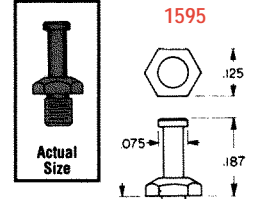
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1545-4	.165	.125

STAKING TOOL NO. TL-12

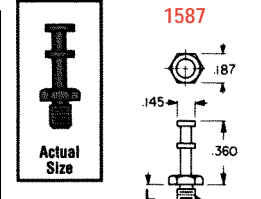
TURRET TERMINALS THREADED BASES



CAT. NO. 1563



CAT. NO.	L
1595-1	.093
1595-2	.125
1595-3	.188



CAT. NO.	L
1587-1	.125
1587-2	.188

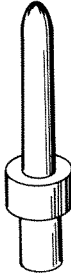




Designers' Choice

# MICRO PINS

- Precision engineered and manufactured
- Space saving design for high density packaging
- Micro pins are available in .017 to .080 diameters
- Ideal for mating with our standard line of micro jacks
- Available for press-fit, swage or solder mounting
- Sizes for .032, .062, .093 and .125 thick PC boards
- Custom micro pins manufactured to your specifications
- Other platings available upon request



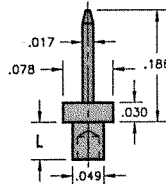
### SPECIFICATIONS

Material: Brass, ASTM-B16

Plating: Gold: .000010 per MIL-G-45204, Type II

Tin: .000200 to .000300 per MIL-T-10727, Type 1

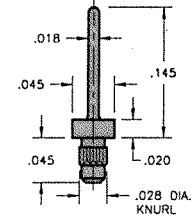
### .017 Pin - SWAGE MOUNT



GOLD PLATED CAT. NO.	TIN PLATED "L" Bd CAT. NO.	Lgth.	Thk.
1967-1	1968-1	.051	.032
1967-2	1968-2	.082	.062
1967-3	1968-3	.113	.093
1967-4	1968-4	.145	.125

Mounting Hole .052 Dia.

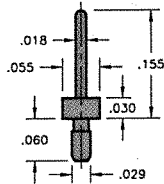
### .018 Pin - PRESS-FIT



GOLD PLATED CAT. NO.	TIN PLATED CAT. NO.
1986-1	1987-1

Mounting Hole .026 Dia.

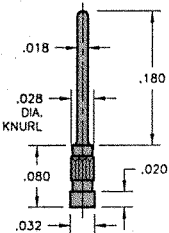
### .018 Pin - PRESS-FIT



GOLD PLATED CAT. NO.	TIN PLATED CAT. NO.
1988-2	1989-2

Mounting Hole .026 Dia.

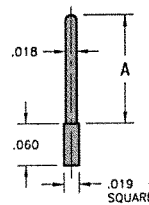
### .018 Pin - PRESS-FIT



GOLD PLATED CAT. NO.	TIN PLATED CAT. NO.	MATERIAL
1990-2	1991-2	Phos. Bronze

Mounting Hole .026 Dia.

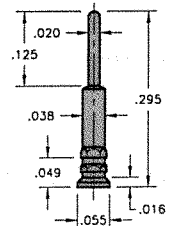
### .018 Pin - PRESS-FIT



GOLD PLATED CAT. NO.	TIN PLATED "A" Dim. CAT. NO.
1992-2	1994-2
1993-2	1995-2

Mounting Hole .022 Dia.

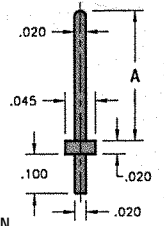
### .020 Pin - PRESS-FIT



GOLD PLATED CAT. NO.	TIN PLATED CAT. NO.
1996-2	1997-2

Mounting Hole .040 Dia.

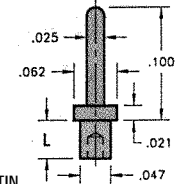
### .020 Pin - SOLDER MOUNT



GOLD PLATED CAT. NO.	TIN PLATED "A" Dim. CAT. NO.
1998-3	2000-3
1999-3	2001-3

Mounting Hole .024 Dia.

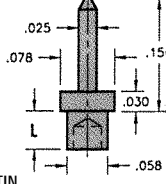
### .025 Pin - SWAGE MOUNT



GOLD PLATED CAT. NO.	TIN PLATED "L" Bd CAT. NO.	Lgth.	Thk.
1404-1	1424-1	.051	.032
1404-2	1424-2	.082	.062
1404-3	1424-3	.113	.093
1404-4	1424-4	.145	.125

Mounting Hole .052 Dia.

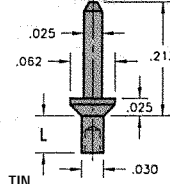
### .025 Pin - SWAGE MOUNT



GOLD PLATED CAT. NO.	TIN PLATED "L" Bd CAT. NO.	Lgth.	Thk.
1408-1	1428-1	.062	.032
1408-2	1428-2	.094	.062
1408-3	1428-3	.125	.093
1408-4	1428-4	.156	.125

Mounting Hole .062 Dia.

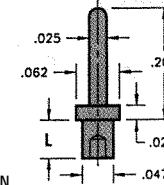
### .025 Pin - SWAGE MOUNT



GOLD PLATED CAT. NO.	TIN PLATED "L" Bd CAT. NO.	Lgth.	Thk.
1406-1	1426-1	.047	.032
1406-2	1426-2	.078	.062
1406-3	1426-3	.110	.093
1406-4	1426-4	.141	.125

Mounting Hole .035 Dia.

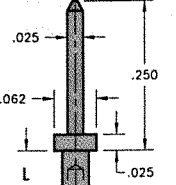
### .025 Pin - SWAGE MOUNT



GOLD PLATED CAT. NO.	TIN PLATED "L" Bd CAT. NO.	Lgth.	Thk.
1407-1	1427-1	.051	.032
1407-2	1427-2	.082	.062
1407-3	1427-3	.113	.093
1407-4	1427-4	.145	.125

Mounting Hole .052 Dia.

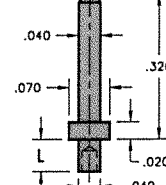
### .025 Pin - SWAGE MOUNT



GOLD PLATED CAT. NO.	TIN PLATED "L" Bd CAT. NO.	Lgth.	Thk.
1401-1	1421-1	.065	.032

Mounting Hole .043 Dia.

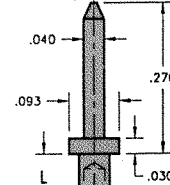
### .040 Pin - SWAGE MOUNT



GOLD PLATED CAT. NO.	TIN PLATED "L" Bd CAT. NO.	Lgth.	Thk.
1405-1	1425-1	.051	.032
1405-2	1425-2	.082	.062
1405-3	1425-3	.113	.093

Mounting Hole .043 Dia.

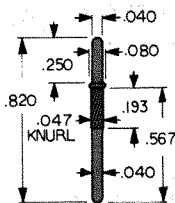
### .040 Pin - SWAGE MOUNT



GOLD PLATED CAT. NO.	TIN PLATED "L" Bd CAT. NO.	Lgth.	Thk.
1402-3	1422-3	.125	.093

Mounting Hole .062 Dia.

### .040 Pin - PRESS-FIT

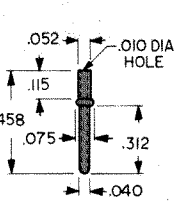


#### KAY PIN

Press-fit into .043 dia. hole

CAT. NO. 1218 MATERIAL: Solid Nickel Silver

### .040 Pin - SWAGE MOUNT

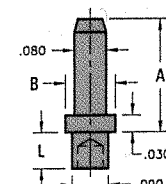


#### TUBULAR HOLLOW PIN

Stake to .062 board. Mounting hole .059 dia.

CAT. NO. 1219 MATERIAL: Brass, Tin Plate

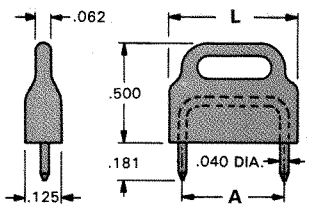
### .080 Pin - SWAGE MOUNT



GOLD PLATED CAT. NO.	TIN PLATED "A" Dim. CAT. NO.	"B" Dim.	"L" Dim.	Bd Thk.
1447-1	1455-1	.335	.156	.051
1447-2	1455-2	.400	.125	.094
1447-3	1455-3	.400	.125	.125
1447-4	1455-4	.400	.125	.156

Mounting Hole .094 Dia.

### .040 Pins - INSULATED SHORTING PLUG



RED PLATED CAT. NO.	BLACK PLATED CAT. NO.	"A" Dim.	"L" Dim.
1460R	1460B	.200	.375
1461R	1461B	.250	.375
1462R	1462B	.400	.620
1463R	1463B	.500	.620

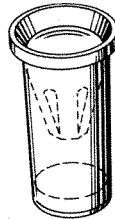
INSULATOR: Plastic, Red or Black  
PINS: Brass, Gold Plate

# MICRO JACKS

Designers' Choice



- Precision engineered, "closed entry" contacts
- Space saving design for high density packaging
- Micro jacks are available for mating with .015 to .082 diameter pins and leads
- Beryllium Copper multi-spring contact maintains retention after multiple insertions
- Ideal for mounting transistors, resistors, diodes, IC's and similar miniature components
- Available for press-fit, swage or solder mounting
- Sizes for .032, .062, .093 and .125 thick PC boards
- Custom micro jacks manufactured to your specifications
- Other platings available upon request



## SPECIFICATIONS

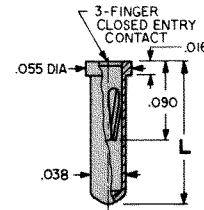
Body: Brass, ASTM-B16

Spring: Beryllium Copper (QQ-C-533)

Plating: Gold: .000010 per MIL-G-45204, Type II

Tin: .000200 to .000300 per MIL-T-10727, Type 1

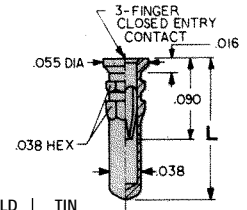
### For .015 - .021 Pin - SOLDER MOUNT



GOLD PLATED CAT. NO.	TIN PLATED CAT. NO.	"L" Lgth
1411-1	1431-1	.140
1411-2	1431-2	.170

Mounting Hole .040 Dia.

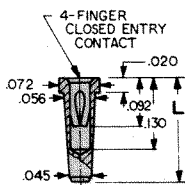
### For .015 - .021 Pin - PRESS-FIT



GOLD PLATED CAT. NO.	TIN PLATED "L" Lgth
1412-1	1432-1 .140
1412-2	1432-2 .170
1412-3	1432-3 .282

Mounting Hole .040 Dia.

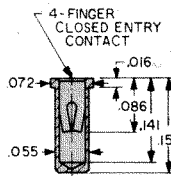
### For .015 - .025 Pin - TAPER-FIT



GOLD PLATED CAT. NO.	TIN PLATED CAT. NO.	"L" Lgth
1415-1	1435-1	.160
1415-2	1435-2	.190

Mounting Hole .055 Dia

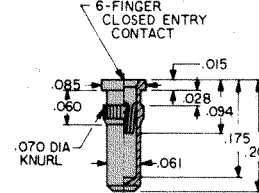
### For .015 - .025 Pin - SOLDER MOUNT



CAT. NO. 1413 - Gold Plate  
CAT. NO. 1433 - Tin Plate

Mounting Hole .057 Dia.

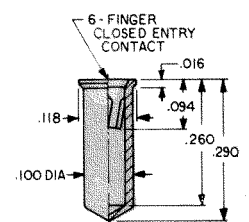
### For .022 - .034 Pin - PRESS-FIT



CAT. NO. 1416 - Gold Plate  
CAT. NO. 1436 - Tin Plate

Mounting Hole .067 Dia.

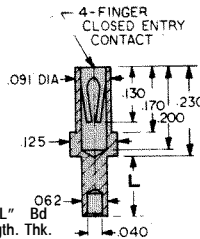
### For .040 - .050 Pin - SOLDER MOUNT



CAT. NO. 1418 - Gold Plate  
CAT. NO. 1438 - Tin Plate

Mounting Hole .102 Dia.

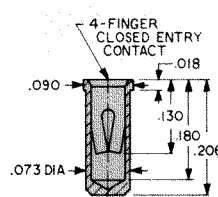
### For .032 - .046 Pin - SWAGE MOUNT



GOLD PLATED CAT. NO.	TIN PLATED CAT. NO.	"L" Lgth	Bd Thk.
1419-1	1439-1	.062	.032
1419-2	1439-2	.094	.062
1419-3	1439-3	.125	.093
1419-4	1439-4	.156	.125

Mounting Hole .067 Dia

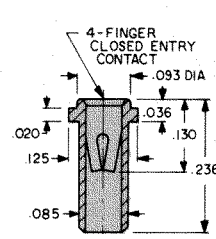
### For .032 - .046 Pin - SOLDER MOUNT



CAT. NO. 1417 - Gold Plate  
CAT. NO. 1437 - Tin Plate

Mounting Hole .076 Dia.

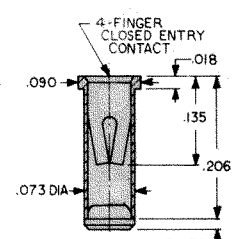
### For .032 - .046 Pin - SOLDER MOUNT



CAT. NO. 1414 - Gold Plate  
CAT. NO. 1434 - Tin Plate

Mounting Hole .089 Dia.

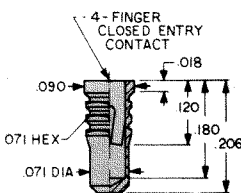
### For .032 - .046 Pin - SOLDER MOUNT



CAT. NO. 1441 - Gold Plate  
CAT. NO. 1444 - Tin Plate

Mounting Hole .076 Dia.

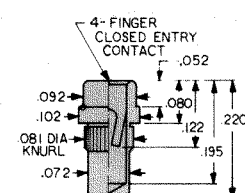
### For .032 - .046 Pin - PRESS-FIT



CAT. NO. 1442 - Gold Plate  
CAT. NO. 1445 - Tin Plate

Mounting Hole .076 Dia.

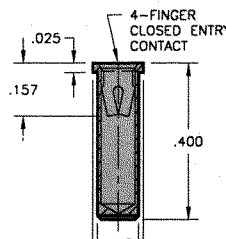
### For .032 - .046 Pin - PRESS-FIT



CAT. NO. 1443 - Gold Plate  
CAT. NO. 1446 - Tin Plate

Mounting Hole .078 Dia.

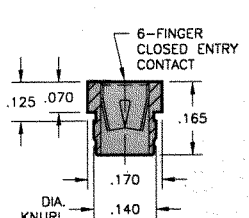
### For .065 - .082 Pin - SOLDER MOUNT



CAT. NO. 1641A - Gold Plate  
CAT. NO. 1641B - Tin Plate

Mounting Hole .120 Dia.

### For .084 - .102 Pin - PRESS-FIT

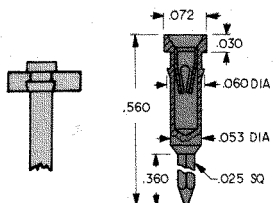


CAT. NO. 1640A - Gold Plate  
CAT. NO. 1640B - Tin Plate

Mounting Hole .138 Dia.

### IC SOCKET CONTACTS - For .015 - .025 Leads

Retains .016 to .022 Dia. Leads.  
4 Finger Contacts.

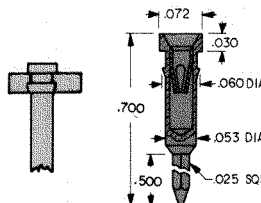


CAT. NO. 3501 - Gold Plate  
CAT. NO. 3505 - Tin Plate

PRESS-FIT Mounting Hole .055 Dia.

### IC SOCKET CONTACTS - For .015 - .025 Leads

Retains .016 to .022 Dia. Leads.  
4 Finger Contacts.

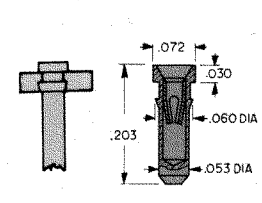


CAT. NO. 3502 - Gold Plate  
CAT. NO. 3506 - Tin Plate

PRESS-FIT Mounting Hole .055 Dia.

### IC SOCKET CONTACTS - For .015 - .025 Leads

Retains .016 to .022 Dia. Leads.  
4 Finger Contacts.



CAT. NO. 3503 - Gold Plate  
CAT. NO. 3507 - Tin Plate

PRESS-FIT Mounting Hole .055 Dia.

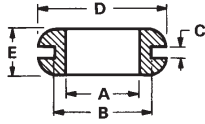


Designers' Choice

# GROMMETS, BUMPERS & BUSHINGS

## RUBBER GROMMETS

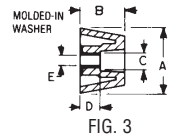
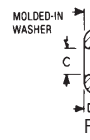
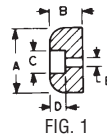
Ideal for electrical insulation and mechanical damping. Made from BUNA S.



CAT. NO.	I.D. A	For Hole B	For Panel C	D	E
730	.125	.187	.062	.312	.187
733	.125	.250	.062	.343	.187
734	.125	.437	.062	.625	.187
735	.125	.375	.093	.500	.312
736	.187	.312	.062	.437	.218
731	.187	.312	.062	.437	.218
737	.187	.281	.093	.437	.218
738	.250	.437	.062	.625	.187
739	.250	.375	.062	.562	.250
740	.250	.375	.093	.500	.250
741	.312	.562	.062	.812	.312
742	.312	.437	.062	.625	.281
743	.312	.437	.093	.625	.312
744	.375	.625	.062	.875	.312
745	.375	.500	.062	.625	.250
732	.437	.562	.062	.750	.250
746	.437	.687	.062	.937	.312
747	.500	.812	.062	1.062	.312
748	.500	1.250	.062	1.500	.250
749	.500	.750	.093	.968	.281
750	.562	.812	.062	1.062	.312
752	.625	.875	.062	1.125	.312
753	.625	1.250	.062	1.500	.250
755	.750	1.062	.062	1.375	.375
756	.750	1.437	.062	1.812	.375
757	.875	1.250	.062	1.625	.437

## RECESSED BUMPERS

Provides excellent traction and shock absorbing qualities. available with or without Mold-in Washers.



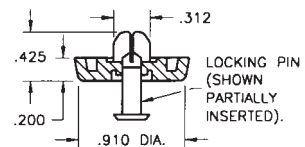
**MATERIAL:** Rubber, BUNA S (figs. 1 & 2), Vinyl (fig. 3)

CAT. NO.	FIG.	A	B	C	D	E	Screw Size
720	1	.500	.250	.250	.187	.125	#4
721	1	.625	.312	.250	.187	.125	#4
722	1	.718	.437	.250	.218	.125	#4
723	2	.937	.375	.375	.187	.187	#8
*724	3	.687	.250	.343	.125	.155	#6
*725	3	.875	.312	.406	.125	.187	#8
*726	3	1.062	.437	.468	.234	.200	#10
727	3	.562	.375	.218	.187	.115	#4
728	3	.750	.437	.265	.250	.148	#6
729	3	.937	.625	.359	.297	.174	#8

\*Grey - all others black

## SELF-LOCKING BUMPER FOOT

- A unique easy-to-install self-locking bumper foot
- Two piece assembly, furnished pre-assembled
- Vibration absorbing and skid resistant
- Mounts without screws or tools



**MATERIAL:**  
Foot: Santoprene, Black  
Pin: Polypropylene, Black

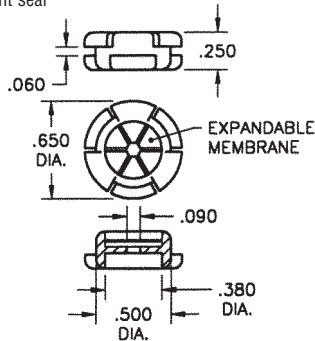
**CAT. NO. 717**

Recommended Mounting Hole: .305 dia.

## "UNIVERSAL" RUBBER GROMMET

Designed to adjust to different wire, cable or tubing diameters from .125 to .312

- Self-adjusting membrane forms a dust resistant seal
- Installs in .500 diameter hole in .062 thick panels or boards
- Molded outer ring retains grommet in place

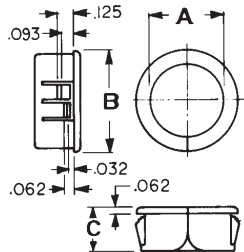


**MATERIAL:** Black Thermoplastic Rubber

**CAT. NO. 777**

## NYLON SPLIT BUSHINGS

Designed to be assembled into holes that already contain wire or cable. Versatile bushing can be used on all chassis from .032 to .125 thick.

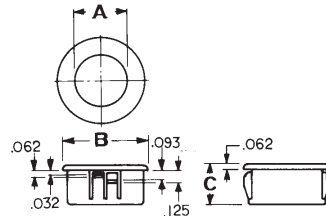


CAT. NO.	HOLE SIZE REQUIRED	A INSIDE DIA.	B HEAD DIA.
8490	.375	.265	.421
8491	.500	.312	.562
8492	.562	.390	.640
8493	.625	.453	.687
8494	.750	.546	.796
8495	.875	.671	.921
8496	1.000	.796	1.062

**MATERIAL:** Nylon 6/6, Black

## NYLON INSULATED BUSHINGS

Snaps into panel hole to provide protection for wire, cable and tubing from sharp uneven edges.



**MATERIAL:** Nylon 6/6, Black

CAT. NO.	HOLE SIZE REQUIRED	MAXIMUM CHASSIS THICKNESS	A INSIDE DIA.	B HEAD DIA.	C OVERALL HEIGHT
8470	.250	.062	.125	.312	.312
8471	.312	.062	.187	.375	.312
8472	.375	.125	.250	.468	.406
8473	.437	.125	.312	.531	.406
8474	.500	.125	.375	.578	.406
8475	.562	.125	.437	.656	.406
8476	.625	.125	.500	.718	.406
8477	.750	.125	.562	.843	.406
8478	.875	.125	.625	.953	.453
8479	1.000	.125	.750	1.125	.453
8480	1.187	.125	.937	1.312	.453
8481	1.250	.125	.937	1.359	.453
8482	1.375	.125	1.000	1.468	.453
8483	1.500	.125	1.062	1.609	.453
8484	1.750	.125	1.375	1.875	.453
8485	2.000	.125	1.625	2.125	.453
8486	2.500	.250	1.968	2.656	.718

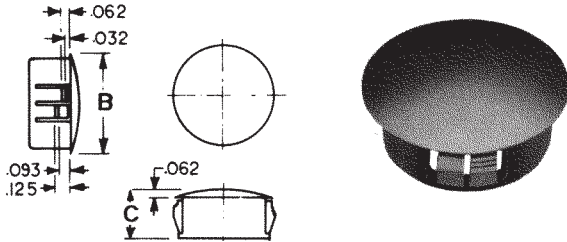
# HOLE PLUGS/CABLE CLAMPS

Designers' Choice



## NYLON HOLE PLUGS

Closes unused chassis holes quickly and economically. Plugs are abrasion and vibration resistant.



**MATERIAL:** Black, Nylon 6/6, Matte Finish

CAT. NO.	HOLE DIA.	PANEL THICKNESS	B	C
8600	.250	.062	.312	.312
8601	.312	.062	.375	.312
8602	.375	.125	.468	.406
8603	.500	.125	.578	.406
8604	.625	.125	.734	.406
8605	.750	.125	.921	.406
8606	.875	.125	1.015	.453
8607	1.000	.125	1.203	.453
8608	1.125	.125	1.218	.453
8609	1.250	.125	1.375	.453
8610	1.375	.125	1.500	.453
8611	1.500	.125	1.671	.453

## STEEL HOLE PLUGS

Excellent spring retention. Plugs will cover chassis holes, wiring outlets, access holes or unused opening.

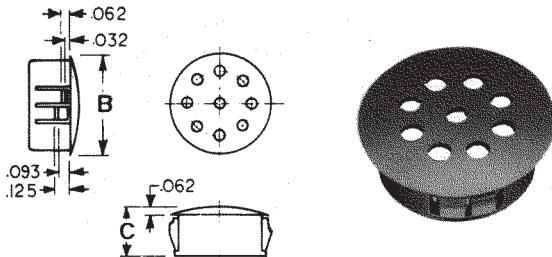


**MATERIAL:** Steel, Nickel Plate

CAT. NO.	Hole Dia.	Panel Thickness	A	B	C	Prongs
7600	.250	.032-.062	.406	.234	.062	6
7601	.312	.047-.078	.437	.250	.062	6
7602	.375	.047-.062	.500	.234	.062	6
7603	.500	.031-.062	.656	.281	.078	8
7604	.625	.062-.093	.812	.296	.078	8
7605	.750	.062-.093	.921	.296	.078	12
7606	.875	.062-.093	1.062	.296	.062	12
7607	1.000	.062-.156	1.140	.328	.093	12
7608	1.125	.031-.125	1.312	.343	.093	12
7609	1.250	.062-.093	1.437	.343	.093	12
7610	1.375	.031-.125	1.562	.406	.078	12
7611	1.500	.031-.062	1.640	.406	.093	12

## NYLON VENT PLUGS

Used to cover chassis holes while allowing air flow for ventilation.



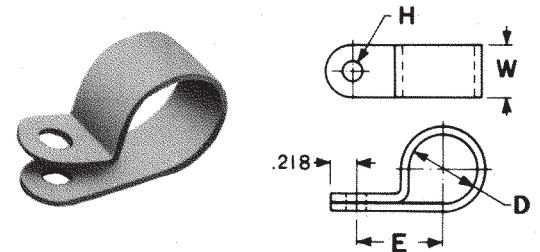
**MATERIAL:** Black, Nylon 6/6, Matte Finish

CAT. NO.	HOLE DIA.	PANEL THICKNESS	B	C
8612	.875	.125	1.015	.453
8613	1.000	.125	1.203	.453

## NYLON CABLE CLAMPS

Ideal for securing, insulating and routing cable wiring, piping, tubing, components and fibre optics.

**MATERIAL:** White, .050 Nylon 6/6

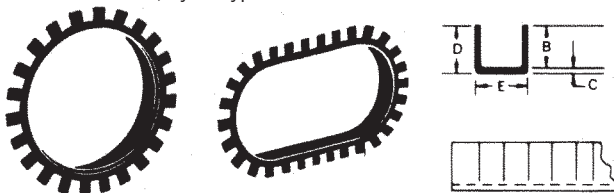


CAT. NO.	D	E	W	H
7620	.125	.325	.375	.140
7621	.125	.325	.375	.203
7622	.187	.380	.375	.140
7623	.187	.380	.375	.203
7624	.250	.410	.375	.140
7625	.250	.410	.375	.203
7626	.312	.445	.375	.140
7627	.312	.445	.375	.203
7628	.375	.475	.375	.140
7629	.375	.475	.375	.203
7630	.437	.525	.375	.140
7631	.437	.525	.375	.203
7632	.500	.550	.375	.140
7633	.500	.550	.375	.203
7634	.562	.625	.500	.203
7635	.625	.660	.500	.203
7636	.750	.785	.500	.203
7637	.875	.845	.500	.203
7638	1.000	.910	.500	.203
7639	1.125	.970	.500	.203
7640	1.250	1.060	.500	.203

## FLEXIBLE GROMMETING

Ideal for maintenance, short-run production, R&D or prototyping. Supplied in 25ft. rolls. Make your own grommets to fit any size or shape required.

**MATERIAL:** Black, Nylon Type 6/6



CAT. NO.	MAX. PANEL	B	C	D	E
8615	.052	.150	.040	.190	.125
8616	.085	.155	.045	.200	.162
8617	.125	.155	.045	.220	.206

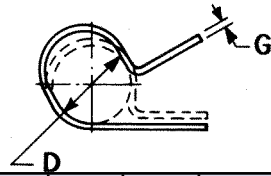
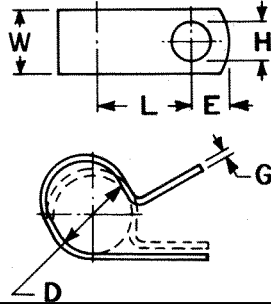


Designers' Choice

# METAL CABLE CLAMPS

## STEEL CABLE CLAMPS

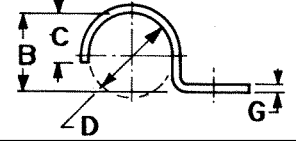
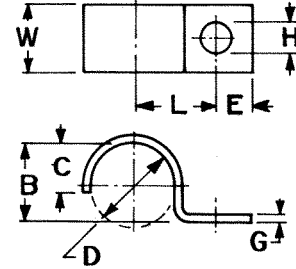
MATERIAL: Steel Zinc Alloy



CAT. NO.	D FOR DIA	H HOLE DIA	L CTR TO CTR	W	E HOLE CTR	G THK
8100	.187	.203	.375	.500	.218	.032
8101	.250	.203	.406	.500	.218	.032
8102	.312	.203	.437	.500	.218	.032
8103	.375	.203	.468	.500	.218	.032
8104	.437	.203	.500	.500	.218	.032
8105	.500	.203	.531	.500	.218	.032
8106	.562	.203	.562	.500	.218	.032
8107	.625	.203	.594	.500	.218	.032
8108	.687	.203	.625	.500	.218	.032
8109	.750	.203	.656	.500	.218	.032
8110	.812	.203	.687	.500	.218	.032
8111	.875	.203	.718	.500	.218	.032
8112	.937	.203	.750	.500	.218	.032
8113	1.000	.203	.781	.500	.218	.032

## STEEL HALF CLAMPS

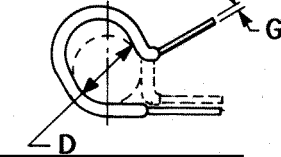
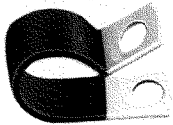
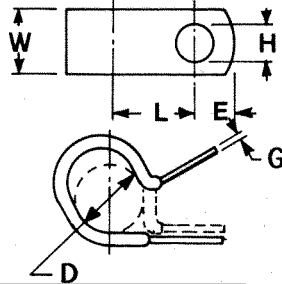
MATERIAL: Steel Zinc Alloy



CAT. NO.	D FOR DIA	H HOLE DIA	L CTR TO CTR	E	B	C	G THK	W
8140	.125	.218	.437	.250	.125	.093	.032	.500
8141	.187	.218	.437	.250	.156	.093	.032	.500
8142	.250	.218	.437	.250	.187	.156	.032	.500
8143	.312	.218	.500	.250	.250	.187	.048	.500
8144	.375	.218	.531	.312	.312	.218	.048	.625
8145	.437	.218	.562	.312	.375	.281	.048	.625
8146	.500	.218	.625	.312	.437	.312	.060	.625
8147	.562	.218	.687	.312	.500	.343	.060	.625
8148	.625	.218	.750	.312	.562	.437	.060	.625
8149	.687	.218	.812	.312	.625	.406	.060	.625
8150	.750	.218	.812	.312	.687	.437	.060	.625
8151	.812	.218	.875	.312	.750	.468	.060	.625
8152	.875	.281	.937	.375	.812	.531	.060	.750
8153	.937	.281	.968	.437	.812	.593	.060	.750
8154	1.000	.281	1.000	.437	.937	.625	.060	.750

## INSULATED STEEL CABLE CLAMPS

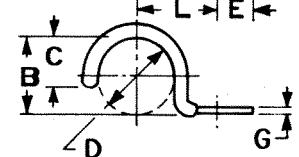
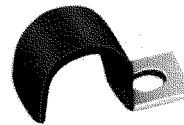
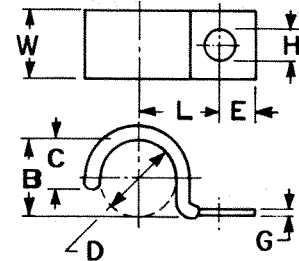
MATERIAL: Steel Zinc Alloy  
CUSHION: Black Vinyl, .032 Thick



CAT. NO.	D FOR DIA	H HOLE DIA	L CTR TO CTR	W	E	G THK
8120	.125	.203	.375	.500	.218	.032
8121	.187	.203	.406	.500	.218	.032
8122	.250	.203	.437	.500	.218	.032
8123	.312	.203	.468	.500	.218	.032
8124	.375	.203	.500	.500	.218	.032
8125	.437	.203	.531	.500	.218	.032
8126	.500	.203	.562	.500	.218	.032
8127	.562	.203	.594	.500	.218	.032
8128	.625	.203	.625	.500	.218	.032
8129	.687	.203	.656	.500	.218	.032
8130	.750	.203	.687	.500	.218	.032
8131	.812	.203	.718	.500	.218	.032
8132	.875	.203	.750	.500	.218	.032
8133	.937	.203	.781	.500	.218	.032
8134	1.000	.203	.812	.500	.218	.032

## INSULATED STEEL HALF CLAMPS

MATERIAL: Steel Zinc Alloy  
CUSHION: Black Vinyl, .032 Thick



CAT. NO.	D FOR DIA	H HOLE DIA	L CTR TO CTR	E	B	C	G THK	W
8160	.187	.218	.437	.250	.187	.156	.032	.500
8161	.250	.218	.500	.250	.250	.187	.048	.500
8162	.312	.218	.531	.312	.312	.218	.048	.625
8163	.375	.218	.562	.312	.375	.281	.048	.625
8164	.437	.218	.625	.312	.437	.312	.060	.625
8165	.500	.218	.687	.312	.500	.343	.060	.625
8166	.562	.218	.750	.312	.562	.437	.060	.625
8167	.625	.218	.812	.312	.625	.406	.060	.625
8168	.687	.218	.812	.312	.687	.437	.060	.625
8169	.750	.218	.875	.312	.750	.468	.060	.625
8170	.812	.281	.937	.375	.812	.531	.060	.750
8171	.875	.281	.968	.437	.812	.593	.060	.750
8172	.937	.281	1.000	.437	.937	.625	.060	.750
8173	1.000	.281	1.062	.437	1.000	.687	.060	.750

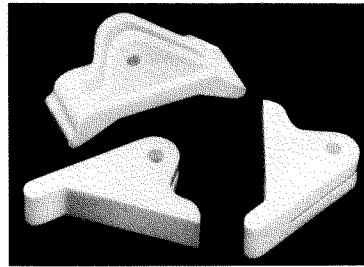
# PC BOARD & CABLE ACCESSORIES

Designers' Choice

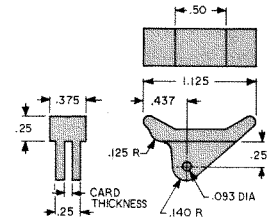
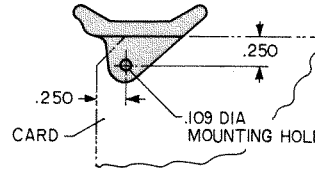


## LEVEL ACTION PC CARD EJECTORS

Designed for .062 thick PC cards. Level action ejectors aids card insertion and extraction. Supplied complete with stainless steel spring pin.

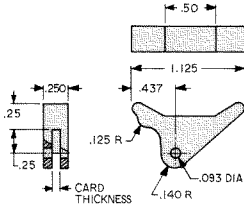


### CARD MOUNTING DIMENSIONS

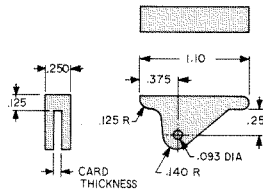


**MATERIAL:** White Nylon 6/6, UL rated 94V-2

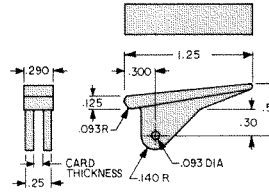
CAT. NO. 8640



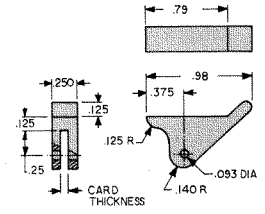
CAT. NO. 8641



CAT. NO. 8642



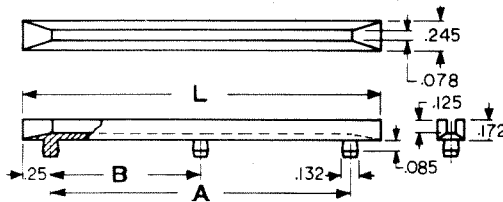
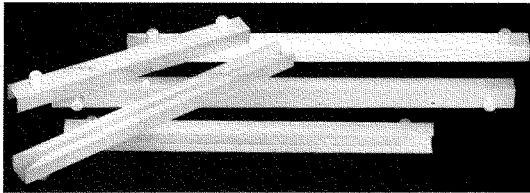
CAT. NO. 8643



CAT. NO. 8644

## PC BOARD GUIDES

Guides may be used horizontally or vertically and snap into .125 diameter holes. Narrow width allows maximum density and optimum air-flow. Simple press-fit, secure installation.

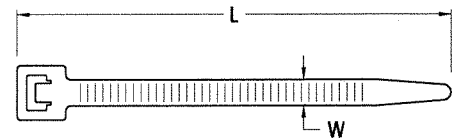
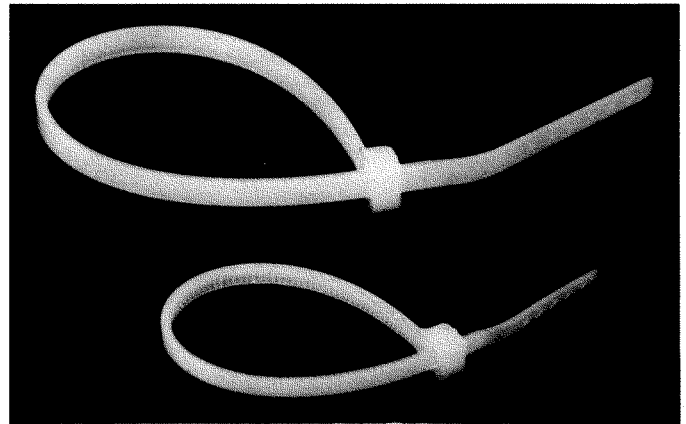


**MATERIAL:** Natural Nylon 6/6, UL rated 94V-2

CAT. NO.	L	A	B
8620	2.5	2.0	—
8621	3.0	2.5	—
8622	3.5	3.0	—
8623	4.0	3.5	—
8624	4.5	4.0	—
8625	5.0	4.5	—
8626	5.5	5.0	—
8627	6.0	5.5	—
8628	6.5	6.0	—
8629	7.0	6.5	—
8630	7.0	6.5	3.25
8631	7.5	7.0	—
8632	7.5	7.0	3.50
8633	8.0	7.5	—
8634	8.0	7.5	3.75
8635	8.5	8.0	—
8636	8.5	8.0	4.00

## CABLE TIES

Popular sizes and strengths to meet common cable tie requirements. Injection molded with one piece construction for strength and reliability. Easily installed by hand. Optional installation tool available, tightens and flush cuts cable tie.



**MATERIAL:** Natural Nylon 6/6, UL rated 94V-2

CAT. NO.	TENSILE STRENGTH (Min. Bundle)	BUNDLE DIAMETER (Maximum)	L LENGTH (Approx.)	W WIDTH (Approx.)	T THICKNESS (Approx.)
8865	18 lbs	1.000	4.250	0.100	0.045
8866	18 lbs	2.000	8.000	0.100	0.045
8867	40 lbs	1.250	6.000	0.140	0.050
8868	50 lbs	1.750	7.500	0.190	0.055
8869	120 lbs	4.000	14.500	0.190	0.055
8870	Hand Operated Cable Tie Installation Tool for 18lb to 50lb Ties				



Designers' Choice

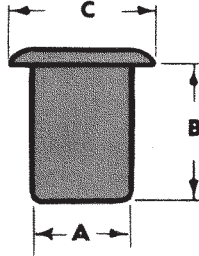
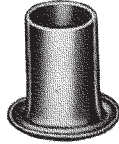
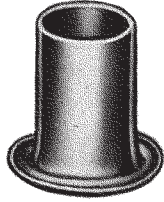
# PINS, EYELETS, RIVETS AND TOOLS

## WIDE ROLL EYELETS

A choice of the most popular sizes in use for PC board and electronic assembly applications.

**MATERIAL:** Brass

**PLATING:** Bright Electro Tin, MIL-T-10727. Recommended for longer shelf life and better solderability. Other platings can be furnished.

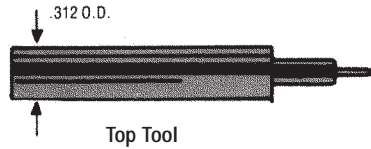


**TOLERANCE:**  
 A PLUS OR MINUS .003.  
 B PLUS OR MINUS .008.  
 C PLUS OR MINUS .005.

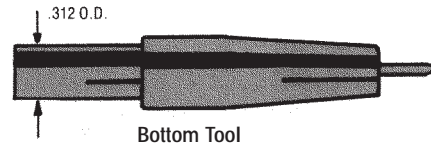
CAT. NO.	"A" OUTSIDE DIAMETER BARREL	"B" LENGTH UNDER FLANGE	"C" FLANGE DIAMETER	HOLE SIZE OF MATERIAL TO BE EYELETED
22		.062		
23		.093		
24	All Are .059 O.D.	.125	All Are .105 dia.	.062 (1/16")
25		.156		USE DRILL #51
26	.045 I.D.	.187		
27		.219		
33		.093		
34	All Are .089 O.D.	.125	All Are .150 dia.	.093 (3/32")
35		.156		USE DRILL #42
36	.070 I.D.	.187		
37		.219		
43		.093		
44	All Are .121 O.D.	.125	All Are .200 dia.	.125 (1/8")
45		.156		USE DRILL #30
46	.102 I.D.	.187		
47		.219		
48		.250		

## EYELET STAKING TOOL

Set consisting of top & bottom tool.  
 Made from Tool Steel and highly polished.



Top Tool



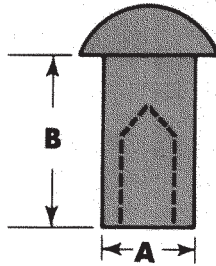
Bottom Tool

CAT. NO. 3075 - For 1/16" Eyelet  
 CAT. NO. 3076 - For 3/32" Eyelet  
 CAT. NO. 3077 - For 1/8" Eyelet

## SEMI-TUBULAR RIVETS



These standardized brass rivets typify the scope and variety of popular rivets that will provide faster and stronger assemblies at lower cost. The "A" dimension includes the necessary clinch allowances but we suggest you rivet and test a sample before purchasing large quantities for your application.



**MATERIAL:** Brass, Nickel Plate

CAT. NO.	"A" SHANK DIAMETER	"B" LENGTH UNDER HEAD	HEAD DIAMETER TOL. ± .005	HOLE SIZE OF MATERIAL TO BE RIVETED
3381	.058	.125		.067 DIA.
3382	TO	.156	.109	USE #51 DRILL
3383	.061	.187		
3384	.085	.156		.093 DIA.
3385	TO	.187	.147	USE #42 DRILL
3386	.089	.218		
3387		.250		
3388	.118	.156		.128 DIA.
3389	TO	.187	.218	USE #30 DRILL
3390	.123	.218		
3391		.250		

## .025 SQUARE WIRE WRAP PINS

Completely burr free straight to within .003 per inch. Conical ends of square-wire with smooth blend-in radius on corners assures ease of insertion with minimum damage to pre-plated PCB holes, which ensures trouble free insertion into printed circuit boards or when used with plug-in terminals.

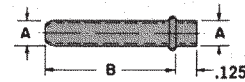
**MATERIAL:** Phosphor Bronze, Tin Plate



CAT. NO.	"A" LENGTH	CAT. NO.	"A" LENGTH
5070	.400	5077	.642
5071	.440	5078	.675
5072	.515	5079	.720
5073	.535	5080	.850
5074	.600	5081	.916
5075	.615	5082	.995
5076	.625	5083	1.130

## CONTACT PINS (SEAMLESS)

.093 / .125 / .156 DIAMETERS



Pins can be staked to .062 and .093 boards

CAT. NO.	A	A
1223	.093	.293
1224	.093	.357
1226	.093	.437
1220	.125	.379
1210	.125	.566
1230	.156	.379
1231	.156	.566

**MATERIAL:** Brass & Nickel Plate

# STAKING TOOL KITS

Designers' Choice



FOR MANUAL USE AND ADAPTABLE TO ANY ARBOR PRESS – KICKPRESS – DRILL PRESS  
 STAKES – EYELETS – RIVETS – TERMINALS • 1001 USES IN THE LABORATORY OR FACTORY  
 PRODUCE PROFESSIONAL RESULTS • UNIFORMITY ASSURED • QUICK • SIMPLE • LOW COST

## “BASIC” STAKING KIT

For Single End Terminals, Eyelets or Rivets

The unskilled Operator can produce Professional looking assemblies quickly and with little effort.

Stake any Diameter from 1/16" to 1/8".

SINGLE END      EYELETS      RIVETS

Easily stake the following Terminals, Eyelets and Rivets.

“BASIC” KIT Consists of: ONE EACH—  
 TOOL HOLDER NO 1719 (Will hold any 1/4" dia. Tools) complete with 2 Washers and Wing Nut.

TOOLS: 1 each - 1714, 1715, 1716, 1717.  
 Instructions included.

In Drill Press with Power off

Specify Cat. No. 1721 Kit complete.

## “MASTER” STAKING KIT

For Single End, Double End (Feed-Thru) and Fork Terminals Extruded Lugs, Eyelets, Rivets, Etc.

Use in Vise

A New Kit includes all Basic Tooling incorporated in the No. 1721 KIT PLUS additional Tools to do most staking operations required in Laboratory and Factory.

Stake Diameters from 1/16" to 3/16"

Easily stake the following Terminals, Eyelets and Rivets.

SINGLE END      DOUBLE FEED THRU      MILLED FORK TYPE      BUSHINGS      RIVETS

EYELETS

TOOL HOLDER NO. 1719 (Will hold any 1/4" dia. Tools) complete with 2 Washers and Wing Nut.

TOOLS: 1 each - 1304, 1305, 1306, 1307, 1315, 1316, 1321, 1324, 1325, 1326, 1714, 1715, 1716, 1717, 1719, 1722, 1726.

Instructions included.

Specify Cat. No. 1713 Kit complete.

## INDIVIDUAL TOOLS AS SUPPLIED IN “BASIC” & “MASTER” KITS

1/4" Diameter Tools

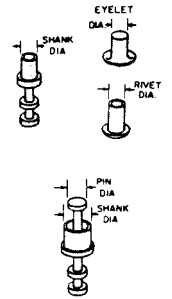
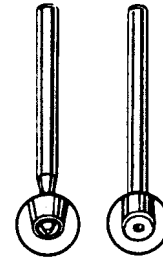
TOP SETTING TOOLS (Swager)  
 For Single End Terminals, Eyelets or Rivets

Cat. No.	For Shank Dia's
1714	.062 to .098
1715	.110 to .125

For Double End (Feed-Thru)

Hole in tool fits over Pin head and securely stakes the rivet part of terminal.

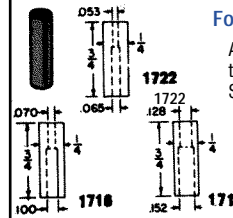
Cat No.	For Pin on Rivet end
1304	.051 Hole Dia.
1305	.063 Hole Dia.
1306	.073 Hole Dia.
1307	.086 Hole Dia.
1324	.098 Hole Dia.



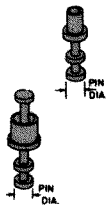
BOTTOM ANVILS

For Single End or Double End Terminals

Anvils have different size holes in each end therefore will accept 2 sizes of Pins of either Single or Double end Turret type Terminals.

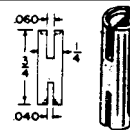


Cat. No.	Hole one end	Hole other end
1722	.053	.065
1716	.070	.100
1717	.128	.152



ANVIL FOR FORK TYPE TERMINALS

Accepts Diameter of 3/32 to 5/32 at one end and diameter of 3/16 other end. .040 slot one end and .060 slot at other end.

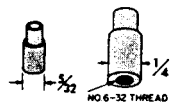


CAT. NO. 1726



ANVIL FOR STANDOFF BUSHINGS

Cat. No.  
 1326 Holds Bushing with 5/32" O.D.  
 1325 For Bushing with 6-32 Thread  
 1309 For Bushing with 4-40 Thread



TOOL HOLDERS  
 For 1/4" Diameter Anvils

For use in vise, Arbor, Kickpress, Punch Press, Drill Press etc. Consists of Holder, 2 washers and wing nut plus instructions.



CAT.NO. 1719



## “IMPACT” STAKING KIT

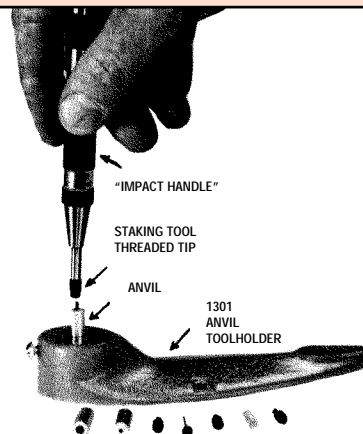
FOR TERMINALS - EYELETS - RIVETS

- ONE HAND OPERATION
- PRESS DOWN AND IT STAKES
- ADJUSTABLE FROM LIGHT TO HEAVY BLOW
- STAKES ALL SHANK DIAMETERS UP TO 3/32"

“IMPACT” KIT Consists of: ONE EACH—  
 TOOL HOLDER NO. 1301 Anvil tool Holder.  
 “IMPACT” HANDLE No. 1302

TOOLS: 1 each - 1310, 1311, 1312, 1313, 1315, 1316, 1321, 1716, 1717, 1722, 1726.  
 Instructions included.

Specify Cat. No. 1707 Kit complete.



EASILY STAKE THE FOLLOWING TERMINALS, EYELETS AND RIVETS.

TOP SETTING TOOLS (Swager)

Top Setting Tools For Impact Staker

Cat. No.	For Shank Dia's
1312	.040 to .072
1313	.078 to .093

For Double-end Terminals (Feed-Thru)  
 Hole in tool fits over Pin head and firmly stakes the rivet part of terminal.

Cat. No.	Hole Dia.
1310	.053
1311	.062





Designers' Choice

# NYLON & FIBRE WASHERS

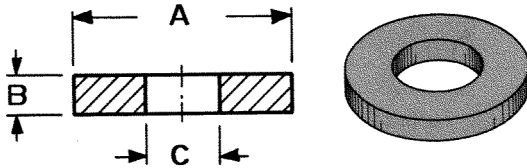
## FLAT WASHERS-NYLON & FIBRE

Quotations on other size washers furnished promptly upon receipt of sample, sketch or blue print.

**MATERIAL:**

Fibre: Commercial Grade per ASTM D710

Nylon: Grade 6/6 per ASTM D4066



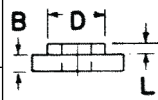
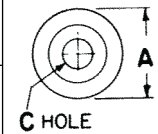
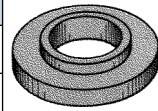
MATERIAL	SCREW SIZE	C I/D	A O/D	B THICKNESS		
				.032 Cat. No.	.047 Cat. No.	.062 Cat. No.
FIBRE	#2	.098	.187	3111	3148	3366
			.250	3112	3149	3367
			.312	3113	3150	3194
NYLON	#2	.098	.187	3114	3151	3356
			.250	3347*	3152	3357*
			.312	3115	3153	3195
FIBRE	#4	.120	.250	3116	3154	3368
			.312	348	3155	3196
			.375	3117	3156	3197
NYLON	#4	.120	.250	3348	345	3358
			.312	3359	3157	3198
			.375	3118	3158	3200
FIBRE	#6	.140	.250	3119	3159	3369
			.312	3120	3160	3370
			.375	3121	3161	3201
NYLON	#6	.140	.250	3122	3162	3360
			.312	3349	346	3361
			.375	3123	3163	3202
FIBRE	#8	.171	.312	3124	3164	3203
			.375	3125	3165	3372
			.437	3126	3166	3204
NYLON	#8	.171	.312	3127	3167	3205
			.375	3350	3168	3363
			.437	3128	3169	3206
FIBRE	#10	.196	.312	349	3170	3207
			.375	3129	3171	3208
			.437	3130	3172	3209
NYLON	#10	.196	.500	3131	3173	3210
			.312	3364	3174	3211
			.375	3352	3175	3212
FIBRE	1/4	.260	.437	3134	3178	3215
			.500	3135	3179	3373
			.625	3136	3180	3216
NYLON	1/4	.260	.750	3137	3181	3217
			.437	3138	3182	3218
			.500	3353	3183	3365
FIBRE	3/8	.385	.625	3139	3184	3219
			.750	3140	3185	3220
			1.000	3141	3186	3221
NYLON	3/8	.385	.625	3142	3187	3222
			.750	3143	3188	3223
			1.000	3144	3189	3224
FIBRE	#2	.098	.500	3145	3190	3225
			.625	3354	3191	3226
			.750	3146	3192	3227
NYLON	#2	.098	1.000	3147	3193	3228

\* .090 I.D.

## FIBRE SHOULDER WASHERS

**MATERIAL:** Fibre, Commercial Grade per ASTM D710

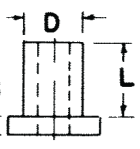
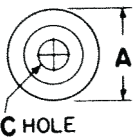
CAT. NO.	SCREW SIZE	L	A	B	C	D
3229	#2	.025	.250	.047	.093	.123
3061	#2	.025	.250	.047	.093	.123
344	#4	.015	.312	.062	.125	.203
343	#4	.025	.312	.062	.125	.203
3062	#4	.031	.250	.031	.115	.187
3230	#4	.031	.281	.062	.115	.175
3231	#4	.031	.312	.062	.120	.180
4698	#6	.031	.250	.062	.140	.187
3064	#6	.031	.312	.062	.140	.187
3232	#6	.031	.375	.062	.140	.210
3233	#6	.031	.375	.062	.140	.240
3234	#6	.031	.500	.062	.140	.240
3065	#8	.031	.375	.062	.170	.246
3066	#8	.031	.417	.062	.170	.210
3235	#8	.031	.312	.062	.170	.218
3236	#8	.031	.375	.062	.170	.215
3237	#8	.031	.500	.062	.170	.240
4702	#10	.031	.375	.062	.170	.308
3238	#10	.031	.375	.062	.194	.240
3239	#10	.031	.500	.062	.196	.240
4711	1/4	.031	.500	.062	.253	.308
3240	1/4	.031	.625	.062	.265	.359
3069	3/8	.031	.625	.062	.385	.498
3241	3/8	.031	.750	.062	.385	.498



## NYLON SHOULDER WASHERS/BUSHINGS

**MATERIAL:** Nylon 6/6 per ASTM D4066

CAT. NO.	SCREW SIZE	L	A	B	C	D
7680	#2	.025	.260	.030	.095	.154
3051	#2	.125	.181	.047	.090	.120
3101	#2	.187	.181	.047	.090	.120
3052	#2	.250	.181	.047	.090	.120
3049	#4	.031	.218	.040	.115	.135
7681	#4	.047	.250	.032	.115	.185
3053	#4	.093	.235	.047	.115	.145
3102	#4	.125	.235	.047	.115	.145
3103	#4	.187	.235	.047	.115	.145
340	#4	.250	.235	.047	.115	.145
7682	#6	.032	.385	.062	.145	.240
7683	#6	.032	.250	.062	.140	.187
7684	#6	.032	.312	.062	.140	.187
3054	#6	.125	.290	.047	.140	.170
3104	#6	.187	.290	.047	.140	.170
341	#6	.250	.290	.047	.140	.170
3055	#6	.500	.290	.047	.140	.170
7685	#8	.032	.375	.032	.171	.250
3056	#8	.140	.344	.062	.171	.205
3105	#8	.250	.344	.062	.171	.205
342	#8	.375	.344	.062	.171	.205
3106	#8	.500	.344	.062	.171	.205
7686	#10	.032	.375	.032	.200	.308
3107	#10	.093	.438	.062	.200	.260
3108	#10	.250	.399	.062	.200	.260
3057	#10	.500	.399	.062	.200	.260
3058	#10	.750	.399	.062	.200	.260
7687	1/4	.032	.437	.032	.253	.310
7688	1/4	.078	.492	.032	.260	.312
3059	1/4	.187	.513	.062	.260	.312
3109	1/4	.250	.513	.062	.260	.312
3110	1/4	.375	.513	.062	.260	.312
3060	1/4	.500	.513	.062	.260	.312



# TRANSISTOR MICA INSULATORS

Designers' Choice



- RAPID HEAT DISSIPATION • HIGH DIELECTRIC STRENGTH • NON-TOXIC • LOW COST • FROM STOCK

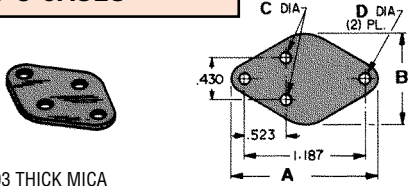
These precision stamped mica insulators provide good thermal conductivity (.009 watts per square inch per degree celsius per inch in thickness). Excellent thermal resistance 1100° F. Dielectric constant of 7 at 1000 Kilohertz.

ORDERING INFORMATION: Minimum quantity 100 pieces of an item.

**MATERIAL SPECIFICATIONS:** .003 thick mica is used for all the insulators on this page. Tolerance for thickness is plus or minus .001.

**Modifications:** Special thickness and other materials available on special order. Prompt quotations will be rendered.

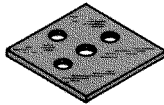
## FOR 10-3 CASES



.003 THICK MICA

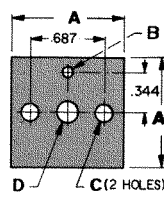
CAT. NO.	A	B	C	D
4651	1.625	1.093	.093	.166
4652	1.560	1.050	.203	.171
4653	1.655	1.063	.166	.166
4636	1.655	1.063	.052	.166
4644	1.655	1.063	.270	.166

## FOR TO-36 CASES



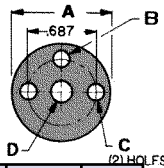
.003 THICK MICA

CAT. NO.	A	B	C	D
4655	1.125	.130	.187	.203
4656	1.250	.140	.156	.203



.003 THICK MICA

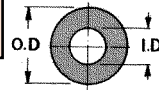
CAT. NO.	A	B	C	D
4657	1.062	.187	.187	.187
4659	1.187	.187	.187	.250



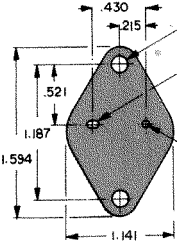
## FOR TRANSISTOR CASES THREADED STUD

.003 THICK MICA

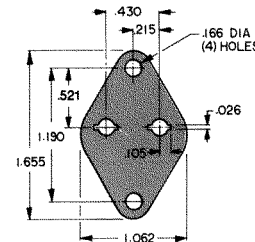
CAT. NO.	ID	OD	For Screw Size
4678	.120	.375	4
4679	.140	.375	6
4680	.171	.500	8
4681	.187	.625	10
4682	.265	.750	1/4
4683	.328	.875	5/16



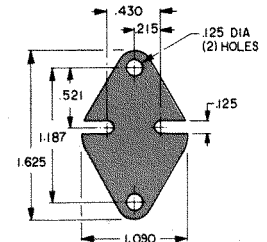
## INSULATORS FOR VARIOUS TO-3 CASES



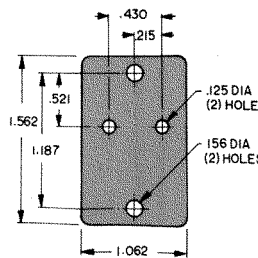
CAT. NO. 4662



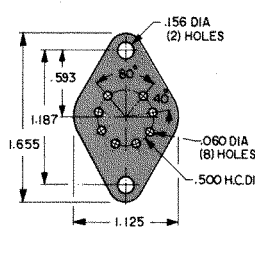
CAT. NO. 4667



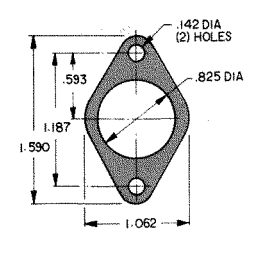
CAT. NO. 4674



CAT. NO. 4661

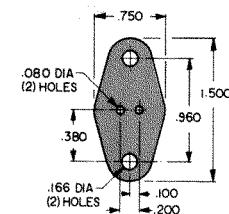


CAT. NO. 4658

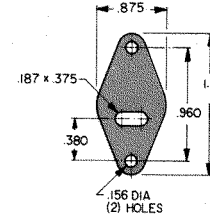


CAT. NO. 4660

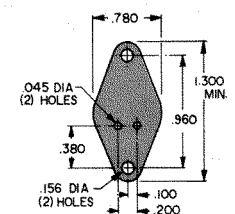
## INSULATORS FOR VARIOUS TO-66 CASES



CAT. NO. 4664

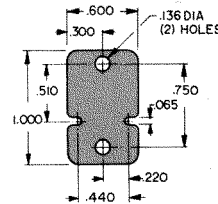


CAT. NO. 4665

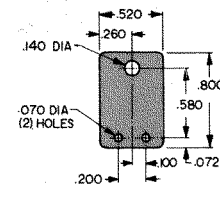


CAT. NO. 4666

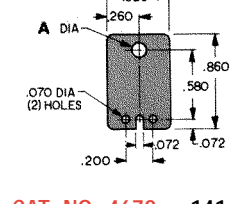
## PLASTIC CASE MICA INSULATORS



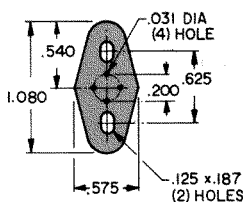
CAT. NO. 4663



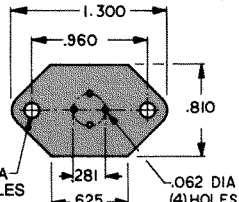
CAT. NO. 4671



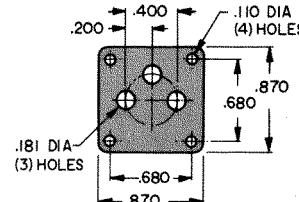
CAT. NO. 4672 .141  
CAT. NO. 4673 .115



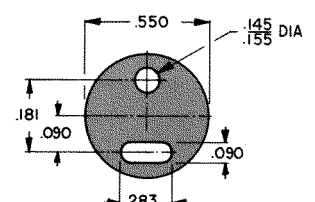
CAT. NO. 4637



CAT. NO. 4640



CAT. NO. 4669



CAT. NO. 4668



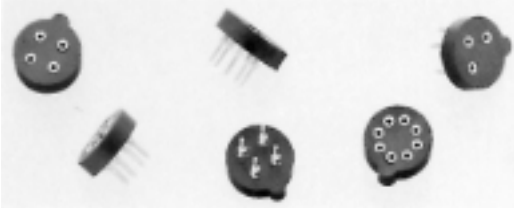
Designers' Choice

# TO-3, TO-5, TO-100 TRANSISTOR SOCKETS

## SOCKETS FOR TO-5 & TO-100

Fully molded compact construction. Speeds transistor assembly. Incorporates ultra high quality, closed entry, sleeve type contacts. Accepts .016 to .020 diameter leads and .010 x .018 rectangular transistor leads.

**MATERIAL:** Insulator: Glass Filled Polyester, UL rated 94V-0; Contact Pin: Brass, Tin Plate; Contact Spring: Beryllium Copper, .000030 min. Gold Plate



**CAT. NO. 4590 - FOR TO-5 (3 PIN)**

**CAT. NO. 4591 - FOR TO-5 (4 PIN)**

**CAT. NO. 4592 - FOR TO-5 (8 PIN)**

**CAT. NO. 4593 - FOR TO-100 (8 PIN)**

**CAT. NO. 4594 - FOR TO-100 (10 PIN)**

## HEAVY DUTY SOCKET FOR TO-3

Features an all-in-one mousing plate and solder tabs, providing complete electrical isolation of the solder tab connections.

CHOICE OF SINGLE OR DUAL COLLECTOR SOLDER TABS

**MATERIAL:** Insulating Base Glass Filled Reinforced Polyester, UL Rated 94V-0

Contacts: Phosphor Bronze, Tin Plate

Mtg. Bracket: Brass, Tin Plate

Rated 5 Amps DC continuous and 15 Amps DC Intermittent

Choice of Single or Dual Tabs

1.600 MAX.  
1.187  
.665  
.450  
.730 REF.  
6-32 THREAD (2) PLS  
.125 DIA. x .250 C'BORE  
.045 DEEP  
(2) INSULATING SHOULDERS  
.218 DIA.  
.060  
.210 DIA.  
.700 MAX.  
.028  
.325  
TAB 'A'  
TAB 'B'

With transistor lead-in insulating shoulders

CAT. NO.	WITH TAB
4513	"A" ONLY
4514	"A" & "B"

Less transistor lead-in insulating shoulders

CAT. NO.	WITH TAB
4515	"A" ONLY
4516	"A" & "B"

## "MINI" HALOGEN LAMP SOCKETS

• Accepts .022 - .032 diameter Pins or Leads • The wire wrap Pins are annealed dead sort and can be easily bent to achieve a variety of positions.



CAT. NO. 4595

### SPECIFICATIONS

Base: Glass Filled LCP

Contact: Beryllium Copper - Gold Plated

Shell: Brass, Nickel Plate

4595

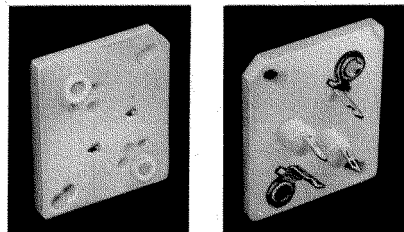
4596

CAT. NO. 4596 - with .025 SQ. Wire Wrap

## FULLY MOLDED TO-3 SOCKET

Pre-assembling the socket to the chassis by eyelets or rivets permits the installation of the semi conductor at a later stage in the assembly. The molded top boss eliminates hardware.

**MATERIAL:** Molded Nylon 6/6



41  
6.4  
3.3  
6.4  
FORMED THD FOR NO.6-20 TYPE B SCREW  
1.36 DIA.(4)  
1.18  
1.188  
521  
56° 30'  
655 REF  
430  
215  
1.44 ID  
1.270  
6.95  
1.18  
0.68  
450  
1.090  
0.68  
1.40  
261.00  
344  
0.050  
CONTACT (2) BRASS TIN PLATE  
COLLECTOR PLATE CRS TIN PLATE  
MOLDED NYLON 6-6

CAT. NO. 4620

# TO-3 POWER TRANSISTOR SOCKETS

Designers' Choice

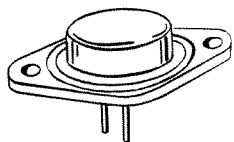


## SOCKETS FOR TO-3 CASE

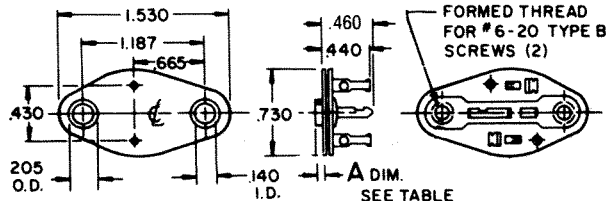
### VARIOUS MOLDED BOSS HEIGHTS

The socket is held underneath the chassis and the semiconductor is inserted into the contacts of the socket holding the assembly in position. To complete the mounting, use 6-20 screws to engage the formed holes in the collector plate.

CAT. NO.	A DIM.
4603	.030
4602	.045
4601	.090



**MATERIAL:**  
Top Plate: Molded Nylon  
Base: Phenolic

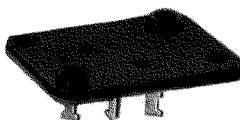
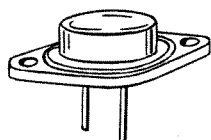


## SOCKETS FOR TO-3 CASE

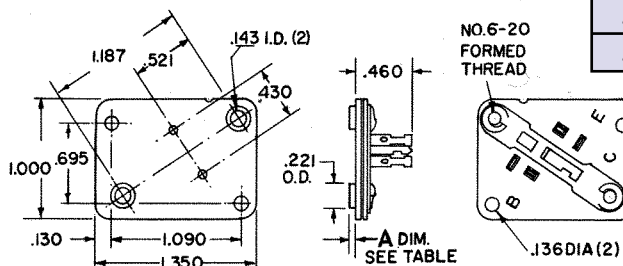
### VARIOUS MOLDED BOSS HEIGHTS

Pre-assembling the socket to the chassis by eyelets or rivets permits the installation of the semiconductor at a later stage in the assembly.

CAT. NO.	A DIM.
4607	.030
4608	.045
4609	.060
4618	.125

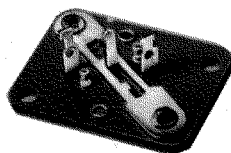
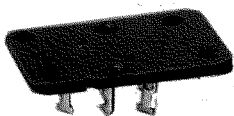
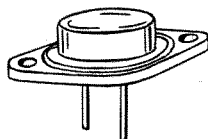


**MATERIAL:**  
Top Plate: Molded Nylon  
Base: Phenolic

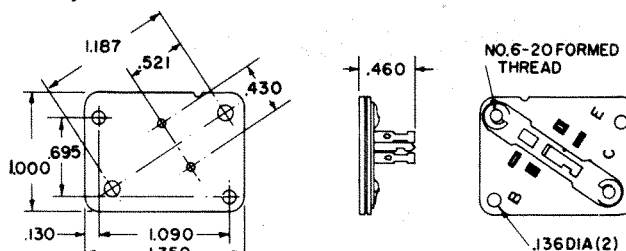


## FOR TO-3 CASE (ALL PHENOLIC SOCKET)

This socket is eyeletted or riveted to the chassis and use external bushings to insulate the screws in the final mounting. The semiconductor may be installed at the last stage of the assembly.



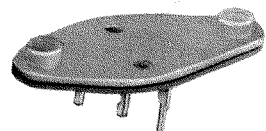
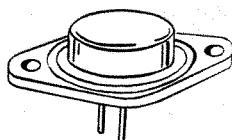
**MATERIAL:**  
Top Plate: Phenolic  
Base: Phenolic



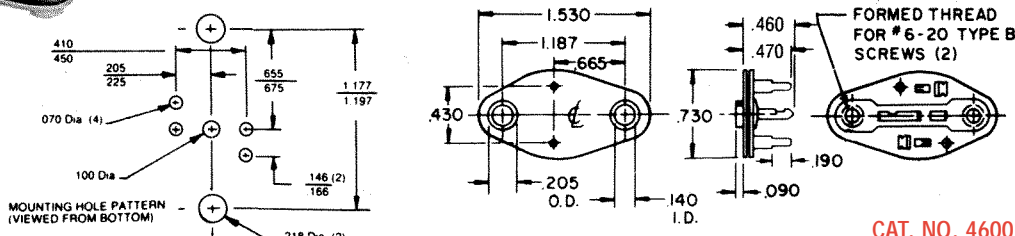
CAT. NO. 4606

## SOCKET FOR TO-3 (PRINTED CIRCUIT)

Easily assembles onto printed circuit board. Eliminates wiring. Stops on P.C. terminals provide sufficient spacing between socket and P.C. board to permit proper assembly of transistor to socket. Can be screwed down tightly to heat sink.



**MATERIAL:**  
Top Plate: Molded Nylon  
Base: Phenolic



CAT. NO. 4600



Designers' Choice

# TRANSISTOR SOCKETS KITS

- LABOR SAVING • EASY MOUNTING TO CHASSIS • BETTER THERMAL EFFICIENCY

An improved, simpler, less costly method of semiconductor mounting. Avoid soldering directly to the semiconductor. Easier to service, economical, more efficient.

**ORDERING INFORMATION:**

Complete Kits or Individual Hardware

Purchase the complete kit by catalog number as shown or individual items in minimum 100 piece packages. Keystone does not supply semiconductors.

**SPECIFICATIONS**

**Socket**

Base: Phenolic, XP grade  
 Contacts: Brass, Tin Plate  
 Top Plate: Nylon per ASTM-D4066  
 Collector Plate: .030 Steel, Tin Plate

**Screws**

Steel, Type B, 4-40 or 6-20 as required

**Mica**

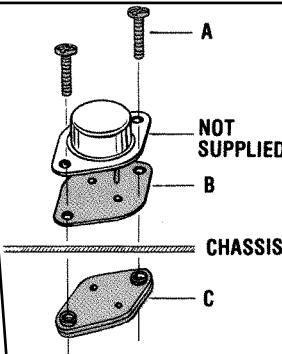
.003 Thick

**SOCKET MOUNTING FOR TO-3 CASE**

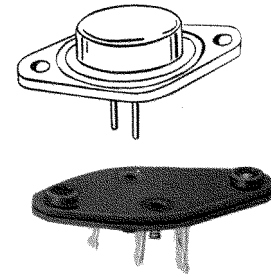
The socket and transistor are assembled without previous attachment to the chassis. Contacts are spaced .430 apart. The .045 high boss on the nylon top eliminates the need of washers or bushings.

ITEM	CAT. NO.	DESCRIPTION	QUANTITY
A	4706	6-20 screws	2
B	4651	Mica Insulator	1
C	4602	Socket	1

CAT. NO. 4732 Complete Mounting Kit (includes all of the above)



**SOCKET ONLY**



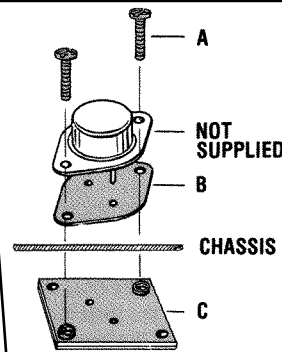
CAT. NO. 4602

**SOCKET MOUNTING FOR TO-3 CASE**

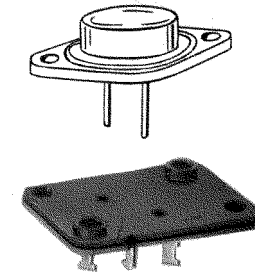
These sockets are pre-assembled to the chassis by either eyelets or rivets. Spacing of contacts is .430 centers. The .045 high boss on the nylon top eliminates the need of washers or bushings.

ITEM	CAT. NO.	DESCRIPTION	QUANTITY
A	4706	6-20 screws	2
B	4651	Mica Insulator	1
C	4608	Square Socket	1

CAT. NO. 4733 Complete Mounting Kit (includes all of the above)



**SOCKET ONLY**



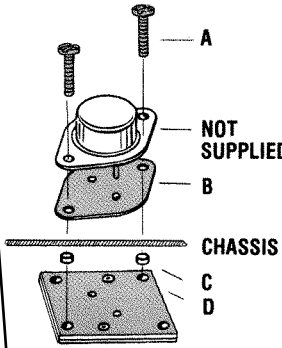
CAT. NO. 4608

**SOCKET MOUNTING FOR TO-3 CASE**

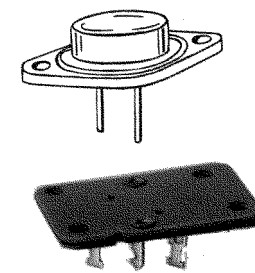
An all phenolic socket that is pre-assembled to the chassis by eyelets or rivets. Spacing and brass contacts .430 centers.

ITEM	CAT. NO.	DESCRIPTION	QUANTITY
A	4706	6-20 screws	2
B	4651	Mica Insulator	1
C	4684	Nylon Bushings	4
D	4606	Sq. Phenol. Socket	1

CAT. NO. 4734 Complete Mounting Kit (includes all of the above)



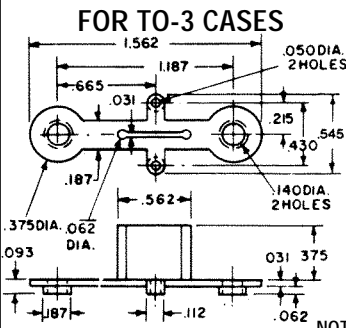
**SOCKET ONLY**



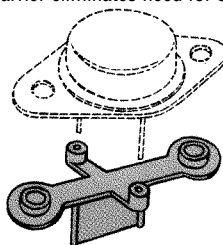
CAT. NO. 4606

**NYLON POWER TRANSISTOR MOUNT**

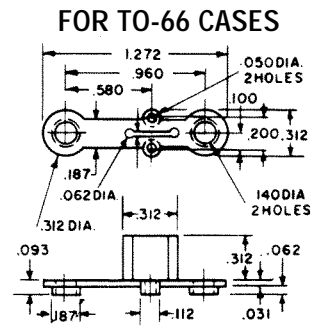
Barrier insulator, molded of type 6/6 natural colored nylon, functionally replaces up to six pieces of conventional insulation required with previous methods of mounting power transistors. Built-in barrier eliminates need for sleeving of connections.



CAT. NO. 4616



CAT. NO. 4617



NOTE: Heavy Duty Insulator made of celanex available. Samples and quote upon request.

# TRANSISTOR MOUNTING KITS

Designers' Choice



- COMPLETE KITS OR INDIVIDUAL HARDWARE • PRE PACKAGED • UNIFORM HARDWARE AT LOW COST

These pre-packaged universal mounting kits provide all the necessary hardware and insulators required to securely mount the semiconductor to the chassis. Purchase the complete kit consisting of all hardware included in one package.

Your choice of individual items available in 100 piece packages. We welcome suggestions for improving these kits and will render prompt quotations for specially packaged hardware. Keystone does not supply any semiconductors.

**ORDERING INFORMATION:** Individual parts are sold in not less than 100 pieces of an item. Complete kits are ordered by specifying the complete mounting kit catalog number.

## FOR TO-3 CASE

FIG. 1

Item	Cat. No.	Description	Quan
A	4696	6-32 Screws	2
B	4651	Mica Insulator	1
C	4698	Shoulder Washers	2
D	4699	Metal Washers	2
E	4004	Solder Terminal	1
F	4700	Lockwashers	2
G	4701	6-32 Nuts	2

CAT. NO. 4725 Complete Mounting Kit

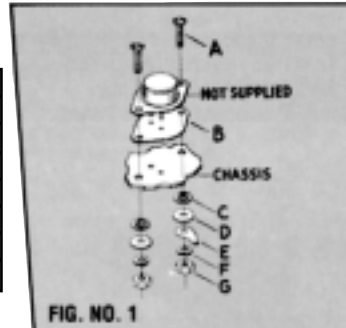


FIG. NO. 1

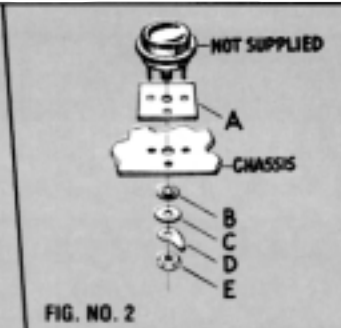


FIG. NO. 2

## FOR TO-66 CASE

FIG. 1

Item	Cat. No.	Description	Quan
A	4696	6-32 Screws	2
B	4666	Mica Insulator	1
C	4698	Shoulder Washers	2
D	4699	Metal Washers	2
E	4004	Solder Terminal	1
F	4700	Lockwashers	2
G	4701	6-32 Nuts	2

CAT. NO. 4726 Complete Mounting Kit

## FOR TO-36 CASE

FIG. 2

Item	Cat. No.	Description	Quan
A	4656	Mica Insulator	1
B	4702	Shoulder Washer	1
C	4703	Metal Washers	1
D	4704	Solder Terminal	1
E	4705	10-32 Nuts	1

CAT. NO. 4727 Complete Mounting Kit

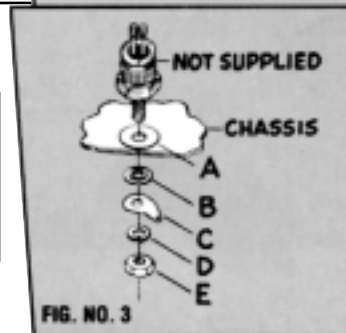


FIG. NO. 3

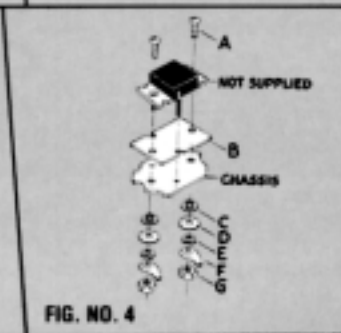


FIG. NO. 4

## FOR PLASTIC CASE

FIG. 4

Item	Cat. No.	Description	Quan
A	4683	4-40 Screws	2
B	4663	Mica Insulator	1
C	343	Shoulder Washers	2
D	4692	Metal Washers	2
E	4693	Lockwashers	2
F	4695	Solder Terminal	2
G	4694	4-40 Nut	2

CAT. NO. 4728 Complete Mounting Kit

## FOR DO-4, TO -59, TO-60, TO-62 CASE

FIG. 3

Item	Cat. No.	Description	Quan
A	4681	Mica Insulator	1
B	4702	Shoulder Washer	1
C	4704	Solder Terminal	1
D	1477	Lockwasher	1
E	4705	10-32 Nuts	1

CAT. NO. 4729 Complete Mounting Kit

## FOR DO-5, TO-48, TO-61 CASE

FIG. 3

Item	Cat. No.	Description	Quan
A	4682	Mica Insulator	1
B	4711	Shoulder Washer	1
C	4712	Solder Terminal	1
D	1476	Lockwasher	1
E	4713	1/4-28 Nuts	1

CAT. NO. 4730 Complete Mounting Kit

## FOR TO-220 CASE

FIG. 4

Item	Cat. No.	Description	Quan
A	4690	4-40 Screws	1
B	4672	Mica Insulator	1
C	3049	Shoulder Washer	1
E	4693	Lockwasher	1
G	4694	4-40 Nuts	1

CAT. NO. 4724 Complete Mounting Kit

## FOR TO-63 CASE

FIG. 3

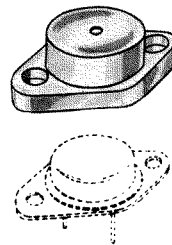
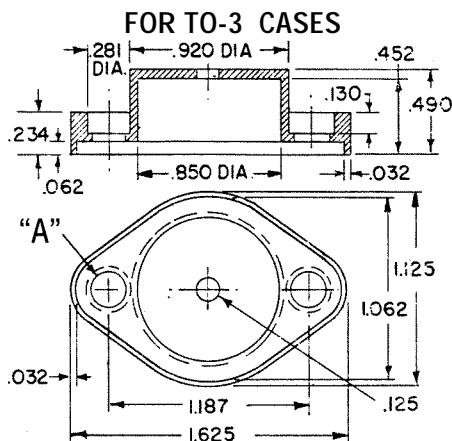
Item	Cat. No.	Description	Quan
A	4683	Mica Insulator	1
B	3241	Shoulder Washer	1
D	1485	Lockwasher	1
E	4716	5/16-24 Nut	1

CAT. NO. 4731 Complete Mounting Kit

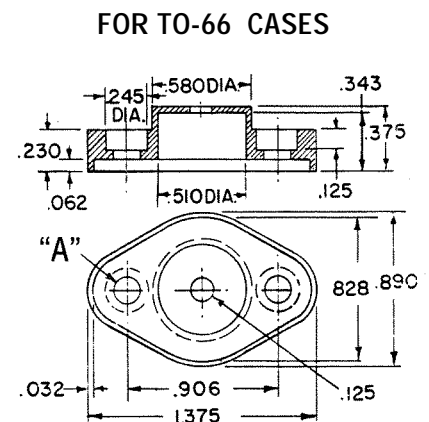
## POWER TRANSISTOR COVERS

Molded nylon covers easily mount over and insulate the power transistor. Will withstand temperatures to approx. 300 °F.

Available with or without brass eyelets installed in mounting holes to assure proper electrical contact with collector/case.



CAT. NO.	FOR	EYELETS INSTALLED	I.D. "A"
4632	TO-3	NONE	.210
4634	TO-3	TWO	.140
4633	TO-66	NONE	.155
4635	TO-66	TWO	.130





Designers' Choice

# PUSH-IN TERMINALS

## For .062 & .093 Dia. Holes

Terminals are pressed into the holes of the board manually; or a low cost insertion tool can be supplied for use at the bench, or in an arbor or drill press.

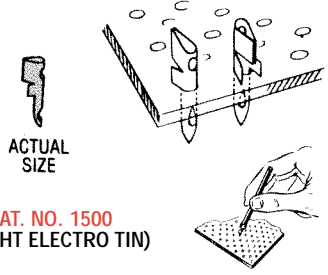
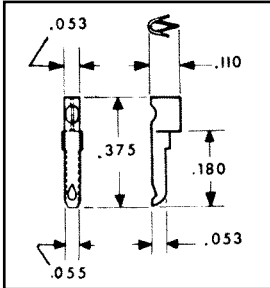
- QUICK & EASY TO INSTALL • NO STAKING REQUIRED
- FOR PRODUCTION OR EXPERIMENTAL USE

### "FLEA" CLIP

#### .062 Dia. Holes

For subminiature applications where conventional terminals are too large or too costly. The design engineer will find them most useful; and the serviceman will need these for quick repairs of printed circuitry. Simply insert wire thru hole and it is held firmly by spring wipe action assuring continued positive contact.

**MATERIAL:** .008 thick Beryllium Copper  
**FINISH:** Bright Tin



**CAT. NO. 1500**  
(BRIGHT ELECTRO TIN)

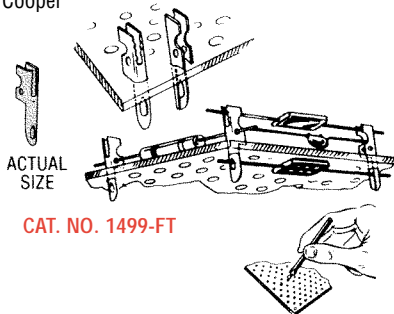
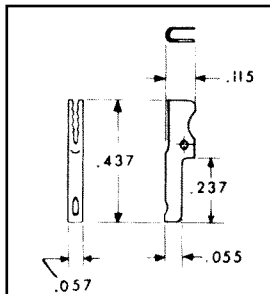
Insertion Tool Cat. No. 1322

### "IMP" TERMINAL

#### .062 Dia. Holes

The name implies the miniature characteristics of this terminal. It is only slightly larger than the "FLEA" clip. Excellent for point to point or feed thru wiring. Slot is serrated to grip component leads. Multiple connections are made quick and easy.

**MATERIAL:** .008 thick Beryllium Copper  
**FINISH:** Tin Plate



**CAT. NO. 1499-FT**

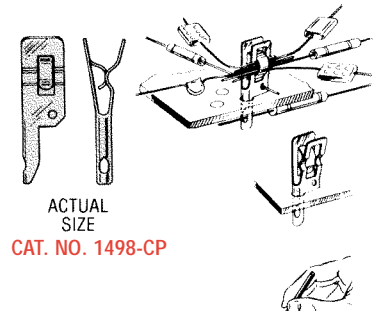
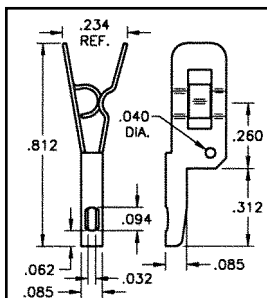
Insertion Tool Cat. No. 1322

### SOLDERLESS TERMINAL

#### .093 Dia. Holes

Terminal for production or breadboarding use. Holds as many as 7 without soldering. A rugged, spring action precision stamped terminal.

**MATERIAL:** .015 Spring Steel  
**FINISH:** Tin Plate



**CAT. NO. 1498-CP**

Insertion Tool Cat. No. 1322

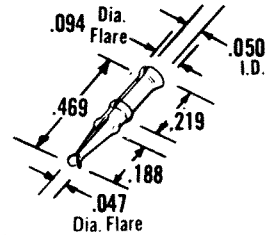
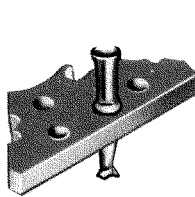
### MINIATURE TUBULAR TERMINALS

#### .062-.067 Dia. Holes

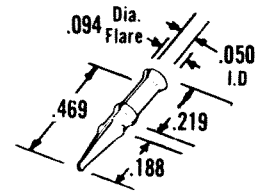
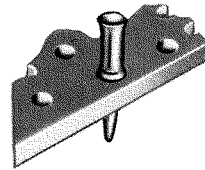
- IDEAL FOR PRINTED CIRCUITRY TAPERED SECTION RETAINS WIRE LEADS
- MOUNT TRANSISTORS, RESISTORS, NEONS
- POSITIVE LOCKING IN HOLE - NO STAKING REQUIRED

These terminals are often used for transistor and Bi-Pin lamp sockets. Terminals snap into a .062-.067 diam. Hole of a 1/16" thick insulator and are firmly held without the need of staking. Wire leads can be inserted from either end and retained. Terminals 1236 and 1237 have tapered socket spring forming that will hold a number of leads in position and allow multiple dip soldering. Terminals are pre-tinned for easy soldering.

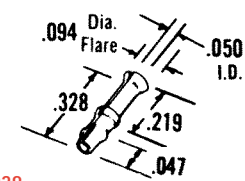
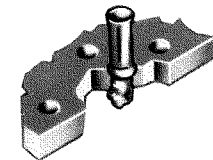
**MATERIAL:** .006 Thick Brass  
Precision Formed and Pre-Tinned  
• HOLDS .010 TO .050 DIAMETER WIRE



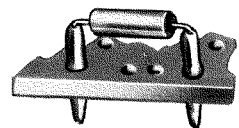
**CAT. NO. 1236**



**CAT. NO. 1237**



**CAT. NO. 1238**



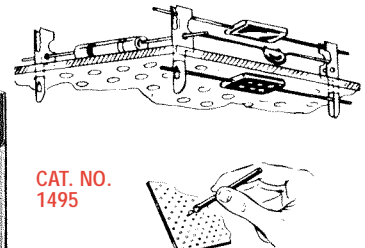
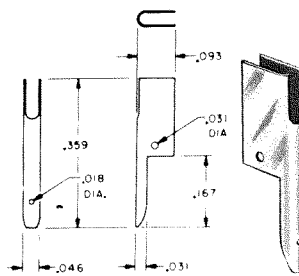
**INSERTION TOOL FOR ABOVE**  
For Arbor Press or similar reciprocation device.  
Specify CAT. NO. TL-11

For Hand Insertion Tool.  
Specify CAT. NO. 1214

### "MICRO" TERMINAL

Easily press-fit into a .042 dia. Hole without staking or the base may be flared for permanent installation. Ideally designed for use in circuitry to support components when space is at a premium.

**MATERIAL:** .008 Beryllium Copper, Tin Plate



**CAT. NO. 1495**

Insertion Tool Cat. No. 1322

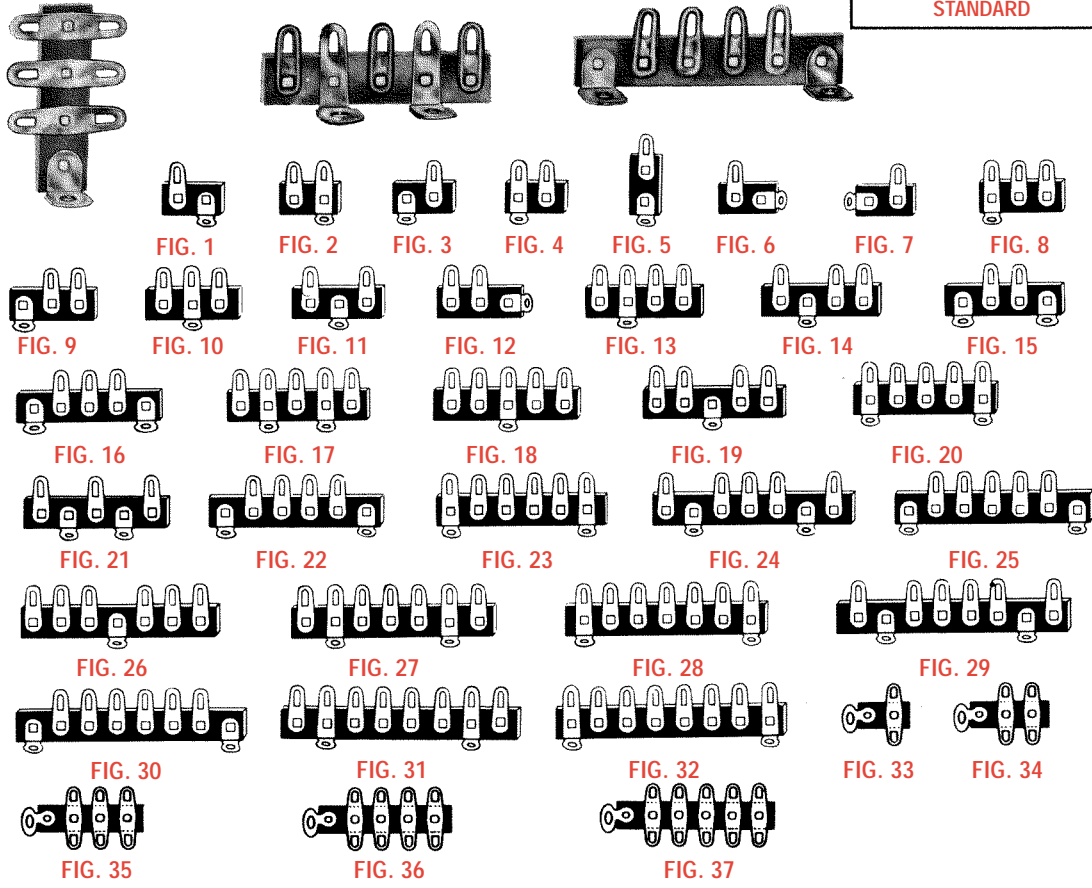
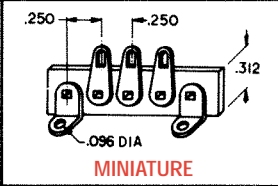
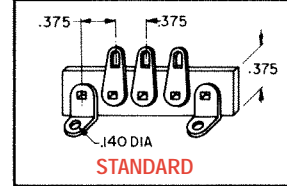
# TERMINAL STRIPS & BOARDS

Designers' Choice



## TERMINAL STRIPS (Standard & Miniature)

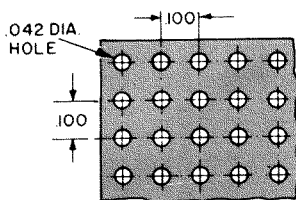
Tin plated lugs and brackets. Bakelite XP .062 thick. In addition to the strips shown, we manufacture many other varieties in any configuration and materials required. Send samples or sketch for prompt quotation.



STANDARD CAT. NO.	FIG. NO.	MINIATURE CAT. NO.
800	1	837
801	2	838
802	3	839
803	4	840
804	5	841
805	6	842
806	7	843
807	8	844
808	9	845
809	10	846
810	11	847
811	12	848
812	13	849
813	14	850
814	15	851
815	16	852
816	17	853
817	18	854
818	19	855
819	20	856
820	21	857
821	22	858
822	23	859
823	24	860
824	25	861
825	26	862
826	27	863
827	28	864
828	29	865
829	30	866
830	31	867
831	32	868
832	33	—
833	34	—
834	35	—
835	36	—
836	37	—

## MIRCO-MINIATURE BREADBOARDS WITH .042 DIA. HOLES

- FOR MODULE STACKS
- SMALLER PLUG-IN CARDS POSSIBLE
- PERMITS HIGHER COMPONENT DENSITY



"P" PATTERN .042 HOLES .100x.100

WIDTH & LENGTH	NO. HOLES W & L	GLASS EPOXY CAT. NO.	XP NATURAL PHENOLIC CAT. NO.	WIDTH & LENGTH	NO. HOLES W & L	GLASS EPOXY CAT. NO.	XP NATURAL PHENOLIC CAT. NO.
<b>.032 THICK (1/32")</b>				<b>.062 THICK (1/16")</b>			
2.00 x 4.50	19 x 44	4225	—	2.00 x 4.50	19 x 44	3405	3396
2.00 x 6.00	19 x 59	4226	—	2.00 x 6.00	19 x 59	3406	3397
4.50 x 6.00	44 x 59	4227	—	2.73 x 17.00	26 x 169	3407	3398
6.00 x 17.00	59 x 169	4228	—	3.00 x 4.50	29 x 44	3408	3399
<b>.047 THICK (3/64")</b>				4.50 x 6.00	44 x 59	3409	3400
2.00 x 4.50	19 x 44	4229	—	4.50 x 6.50	44 x 64	3410	3404
2.00 x 6.00	19 x 59	4230	—	4.50 x 8.50	44 x 84	3411	3425
4.50 x 6.00	44 x 59	4231	—	4.50 x 17.00	44 x 169	3412	3426
6.00 x 17.00	59 x 169	4232	—	6.00 x 17.00	59 x 169	3413	3427

## CUSTOM BUILT TERMINAL BOARDS

We are specialists in the custom fabrication (stamping/machining) of all phenolic, fiberglass and fibre-board materials. We also assemble terminals, eyelets, and special hardware to boards. Quotations on special terminal boards furnished promptly upon receipt of sample, sketch or print. Also available, assembly services using customer supplied materials.





Designers' Choice

# SCORED TURRET TERMINAL BOARDS

## STANDARD TURRET TERMINAL BOARDS

Cut your production cost by eliminating the tooling and setup charge usually applied to nonstandardized boards. Terminals are securely riveted and hot tinned for easy soldering.

**Terminals:** Brass, ASTM-B16

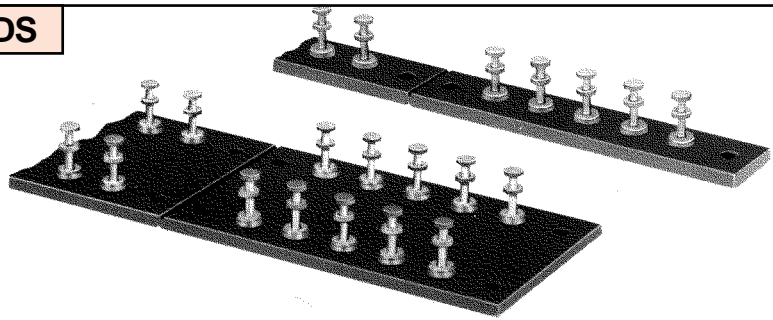
**Plating:** Hot Tin Dipped, MIL-T-10727. Recommended for longer shelf life and better solderability. Other platings can be furnished.

**MATERIAL:** Choice of either PBE or GEE.

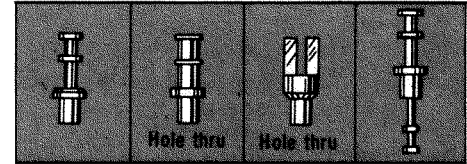
**PBE:** Paper base electrical, MII-P-3115C, Type XP natural, Temp. 250 F max.

**GEE:** Glass epoxy, MIL-I-24768/27, Type G-10, 300 F max.

**Modifications:** Boards can be modified with other materials or terminals of your choice. Can be supplied with terminals staked in all holes or without terminals staked. Marking can be added. Prices on request.

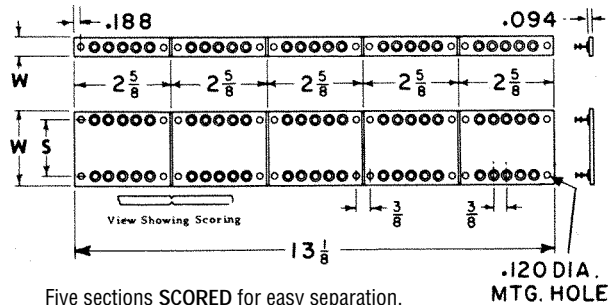


ALL TERMINAL DRAWINGS ARE ACTUAL SIZE. CHOICE OF TERMINALS



## 3/8" SPACING AND SCORED

3/32" THICK PHENOLIC - Choice of 4 Types of Terminals  
Overall Length of Board 13 1/8", five 2 5/8" Sections



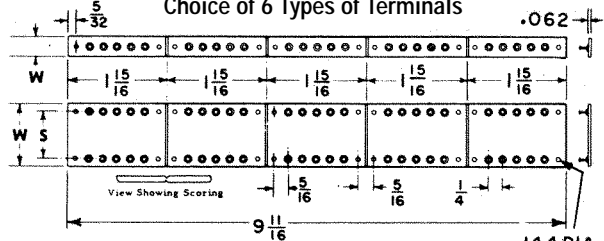
Five sections SCORED for easy separation. M'tg. Holes in each section.

.120 DIA. MTG. HOLE

W	S	NO. OF TERMS.	MATERIAL	WITH 1503 TERM. CAT. NO.	WITH 1509 TERM. CAT. NO.	WITH 1507 TERM. CAT. NO.	WITH 1545 TERM. CAT. NO.
1/2	Single Row	25	PBE	15031	15091	15071	15041
			GEE	15231	15291	15271	15241
1 1/2	1	50	PBE	15032	15092	15072	15042
			GEE	15232	15292	15272	15242
1 1/2	1 3/16	50	PBE	15036	15096	15076	15046
			GEE	15236	15296	15276	15246
2	1 1/2	50	PBE	15033	15093	15073	15043
			GEE	15233	15293	15273	15243
2 1/2	2	50	PBE	15034	15094	15074	15044
			GEE	15234	15294	15274	15244
3	2 1/2	50	PBE	15035	15095	15075	15045
			GEE	15235	15295	15275	15245

## MINIATURE TURRET TERMINAL BOARDS

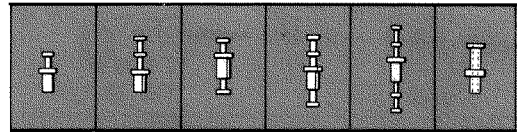
1/4" SPACING AND SCORED - 1/16" THICK PHENOLIC  
Overall Length of Board is 9 11/16", Five 1 15/16" Sections  
Choice of 6 Types of Terminals



Five sections SCORED for easy separation. M'tg. Holes in each section.

.144 DIA. MTG. HOLE

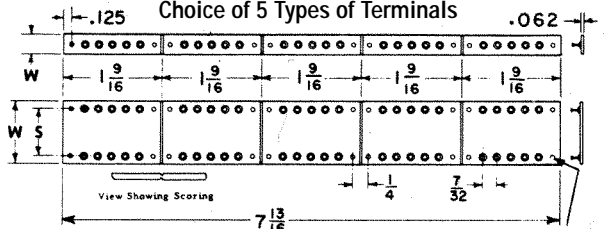
ALL TERMINAL DRAWINGS ARE ACTUAL SIZE. CHOICE OF TERMINALS



W	S	NO. OF TERMS.	MATERIAL	WITH 1572 TERM. CAT. NO.	WITH 1573 TERM. CAT. NO.	WITH 1574 TERM. CAT. NO.	WITH 1575 TERM. CAT. NO.	WITH 1583 TERM. CAT. NO.	WITH 1559 TERM. CAT. NO.
5/16	Single Row	25	PBE	15047	15057	15067	15077	15087	15097
			GEE	15247	15257	15267	15277	15287	15297
7/8	9/16	50	PBE	15048	15058	15068	15078	15088	15098
			GEE	15248	15258	15268	15278	15288	15298
1 1/8	13/16	50	PBE	15049	15059	15069	15079	15089	15099
			GEE	15249	15259	15269	15279	15289	15299

## MINIATURE TURRET TERMINAL BOARDS

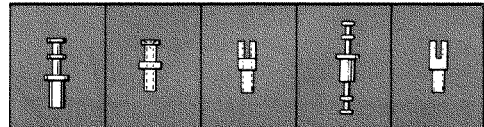
7/32" SPACING AND SCORED - 1/16" THICK PHENOLIC  
Overall Length of Board 7 13/16", Five 1 9/16" Sections  
Choice of 5 Types of Terminals



Five sections SCORED for easy separation. M'tg. Holes in each section.

.062 DIA. MTG. HOLE

ALL TERMINAL DRAWINGS ARE ACTUAL SIZE. CHOICE OF TERMINALS



W	S	NO. OF TERMS.	MATERIAL	WITH 1502 TERM. CAT. NO.	WITH 1562 TERM. CAT. NO.	WITH 1526 TERM. CAT. NO.	WITH 1512 TERM. CAT. NO.	WITH 1533 TERM. CAT. NO.
5/16	Single Row	25	PBE	15021	15023	15025	15063	15053
			GEE	15221	15223	15225	15263	15253
3/4	1/2	50	PBE	15028	15029	15026	15064	15054
			GEE	15228	15229	15226	15264	15254
1	3/4	50	PBE	15022	15024	15030	15065	15056
			GEE	15222	15224	15230	15265	15256

# TURRET TERMINAL BOARDS

Designers' Choice



- SAVE TOOLING • ECONOMICAL
- COMPLETE RANGE OF SIZES

Readi-Made Terminal Boards: Low cost, meets commercial and military specifications. Produced in large quantities, making it possible to eliminate tooling and setup charges usually applied to non-standard boards.

**Terminals:** Brass, ASTM-B16. Terminals are staked in all holes except end mounting holes.

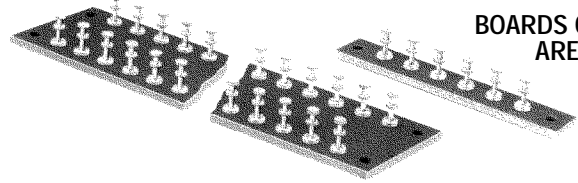
**Plating:** Hot Tin Dipped, MIL-T-10727. Recommended for longer shelf life and better solderability. Other plating can be furnished.

**MATERIAL:** Choice of either PBE or GEE

**PBE:** Paper base electrical, FED. LP-513, Type XP natural, Temp. 250 F max.

**GEE:** Glass epoxy, MIL-I-24768/27, Type G-10, Temp. 300 F max.

**Modifications:** Boards can be modified with other materials or terminals of your choice. Can be supplied with terminals staked in all holes or without terminals staked. Marking can be added. Prices on request.



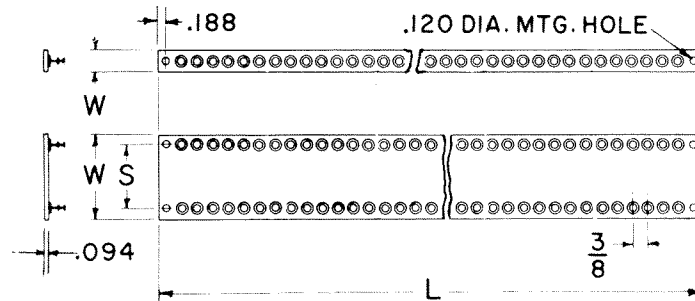
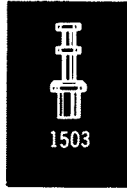
BOARDS ON THIS PAGE ARE NOT SCORED

## TURRET TERMINAL BOARDS 3/8" SPACING

choice of sizes

Terminal: 1503-3 Brass Hot Tin Dipped.  
Height above board 23/64"

**MATERIAL:** Choice of PBE or GEE 3/32" thick.



Terminals are staked in all holes except end mounting holes.

SEE BRACKET PAGE FOR SUITABLE MOUNTING HARDWARE.

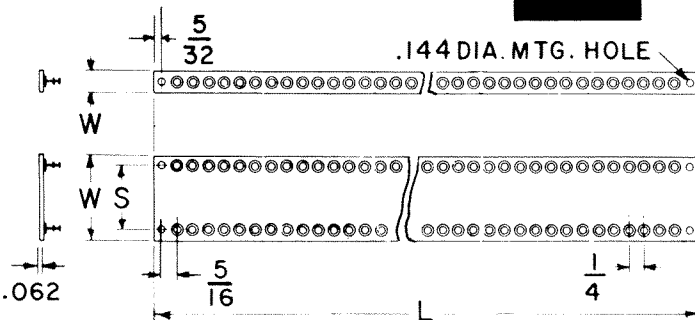
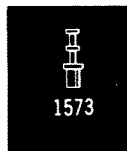
W	S	L	NO. OF TERMS EACH SIDE	MATERIAL PBE CAT. NO.	MATERIAL GEE CAT. NO.
1/2	Single Row	2 5/8	5	15101	15301
		5 1/4	12	15102	15302
		7 7/8	19	15103	15303
		10 1/2	26	15104	15304
		13 1/8	33	15105	15305
1 3/16	3/4	2 5/8	5	15106	15306
		5 1/4	12	15107	15307
		7 7/8	19	15108	15308
		10 1/2	26	15109	15309
		13 1/8	33	15110	15310
1 1/2	1	2 5/8	5	15111	15311
		5 1/4	12	15112	15312
		7 7/8	19	15113	15313
		10 1/2	26	15114	15314
		13 1/8	33	15115	15315
2	1 1/2	2 5/8	5	15116	15316
		5 1/4	12	15117	15317
		7 7/8	19	15118	15318
		10 1/2	26	15119	15319
		13 1/8	33	15120	15320
2 1/2	2	2 5/8	5	15121	15321
		5 1/4	12	15122	15322
		7 7/8	19	15123	15323
		10 1/2	26	15124	15324
		13 1/8	33	15125	15325
3	2 1/2	2 5/8	5	15126	15326
		5 1/4	12	15127	15327
		7 7/8	19	15128	15328
		10 1/2	26	15129	15329
		13 1/8	33	15130	15330

## MINIATURE TURRET TERMINAL BOARDS 1/4" SPACING

choice of sizes

Terminal: 1573-2 Brass, Hot Tin Dipped.  
Height above board 3/16"

**MATERIAL:** Choice of PBE or GEE 1/16" thick.



W	S	L	NO. OF TERMS EACH SIDE	MATERIAL PBE CAT. NO.	MATERIAL GEE CAT. NO.
5/16	Single Row	1 15/16	5	15431	15531
		3 11/16	12	15432	15532
		5 7/16	19	15433	15533
		7 3/16	26	15434	15534
		8 15/16	33	15435	15535
7/8	9/16	1 15/16	5	15436	15536
		3 11/16	12	15437	15537
		5 7/16	19	15438	15538
		7 3/16	26	15439	15539
		8 15/16	33	15440	15540
1 1/8	13/16	1 15/16	5	15441	15541
		3 11/16	12	15442	15542
		5 7/16	19	15443	15543
		7 3/16	26	15444	15544
		8 15/16	33	15445	15545



Designers' Choice

# TURRET TERMINAL BOARDS

## MINIATURE TURRET TERMINAL BOARDS

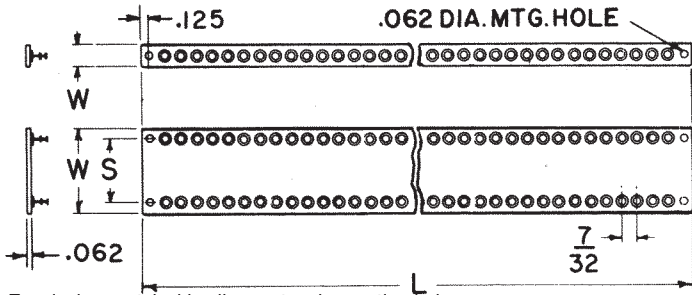
**Terminals:** Brass, ASTM-B16. Terminals are staked in all holes except end mounting holes.

**Plating:** Hot Tin Dipped, MIL-T-10727. Recommended for longer shelf life and better solderability. Other plating can be furnished.

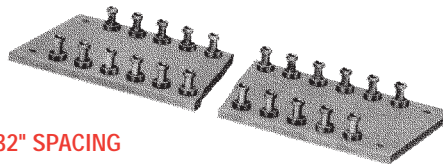
**MATERIAL:** Your choice of eight PBE or GEE phenolic, 1/16" thick.  
**PBE:** Paper base electrical, FED. LP-513. Type XP natural, Temp. 250 F max.  
**GEE:** Glass epoxy, MIL-I-24768/27, Type G-10, Temp. 300 F max.

The 1562 terminal is often specified for support and connection of transistors, resistors and small component parts. There is a .043 dia. Hole thru the terminal and it stands 5/32" above the board.

**MODIFICATIONS:** Boards can be modified with other materials or terminals of your choice. Can be supplied with terminals staked in all holes or without terminals staked. Marking can be added. Prices on request.



Terminals are staked in all except end mounting holes.



7/32" SPACING

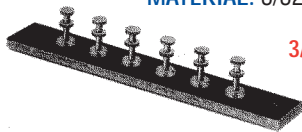


W	S	L	NO. OF TERMS. EACH SIDE	MATERIAL PBE CAT. NO.	MATERIAL GEE CAT. NO.
5/16	Single Row	1 9/16	5	15401	15501
		3 3/32	12	15402	15502
		4 5/8	19	15403	15503
		6 5/32	26	15404	15504
		7 11/16	33	15405	15505
3/4	1/2	1 9/16	5	15406	15506
		3 3/32	12	15407	15507
		4 5/8	19	15408	15508
		6 5/32	26	15409	15509
		7 11/16	33	15410	15510
1	3/4	1 9/16	5	15411	15511
		3 3/32	12	15412	15512
		4 5/8	19	15413	15513
		6 5/32	26	15414	15514
		7 11/16	33	15415	15515

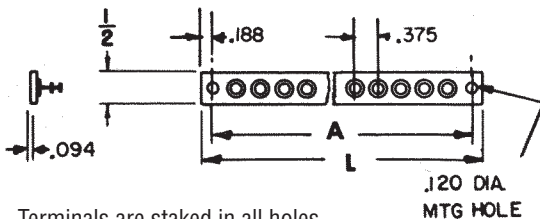
## TURRET TERMINAL BOARDS

**MATERIAL:** 3/32" Thick PBE, Nat.

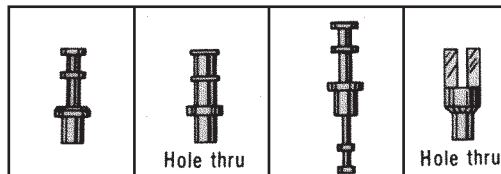
ALL TERMINAL DRAWINGS ARE OF ACTUAL SIZE. CHOICE OF TERMINALS



3/8" SPACING



Terminals are staked in all holes except end mounting holes.



L	A	NO. OF TERMS	WITH 1503 TERM. CAT. NO.	WITH 1509 TERM. CAT. NO.	WITH 1545 TERM. CAT. NO.	WITH 1507 TERM. CAT. NO.
1 1/8	3/4	1	603-1	609-1	604-1	607-1
1 1/2	1 1/8	2	603-2	609-2	604-2	607-2
1 7/8	1 1/2	3	603-3	609-3	604-3	607-3
2 1/4	1 7/8	4	603-4	609-4	604-4	607-4
2 5/8	2 1/4	5	603-5	609-5	604-5	607-5
3	2 5/8	6	603-6	609-6	604-6	607-6
3 3/8	3	7	603-7	609-7	604-7	607-7
3 3/4	3 3/8	8	603-8	609-8	604-8	607-8
4 1/8	3 3/4	9	603-9	609-9	604-9	607-9
4 1/2	4 1/8	10	603-10	609-10	604-10	607-10

MODIFICATIONS: WE CAN MAKE THESE BOARDS IN LONGER LENGTHS WITH OTHER MATERIALS AND USING ANY OTHER STANDARD TERMINALS

## QUICK-FIT TERMINAL STRIPS

**MATERIAL:** Fiberglass-NEMA GRADE GPO-3. A glass polyester rated for continuous operation at 155°C or 300 F. 1/16" thick.

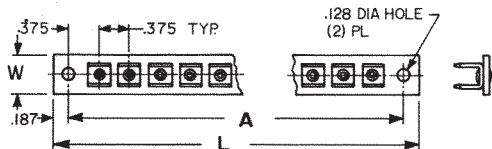
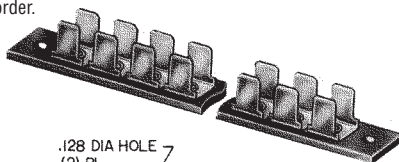
**Backing Strips:** 1/32" thick fibre with mounting holes drilled only.

**Terminals:** Brass,

CAT. NO. 1254 .018 Thick, Bright Electro Tin MIL-F-14072

CAT. NO. 1257 .032 Thick, Bright Brass

Other platings available on special order.



		.205 TAB		.250 TAB		.205 TAB		.250 TAB	
W WIDTH	L LENGTH	A MTG. C'TRS	NO. TERM. EACH SIDE	CAT. NO.	BACKING STRIP CAT. NO.	CAT. NO.	WITH 1254 TERMINAL	WITH 1257 TERMINAL	CAT. NO.
1/2	1 1/2	1 1/8	2	4056	4401	4116	WITH 1254 TERMINAL	WITH 1257 TERMINAL	4117
	2 1/4	1 7/8	4	4057	4402	4117			
	3	2 5/8	6	4058	4403	4118			
	3 3/4	3 3/8	8	4059	4404	4119			
	4 1/2	4 1/8	10	4060	4405	4120			

# TERMINAL STRIPS

Designers' Choice



## STANDARD BINDING POST STRIPS

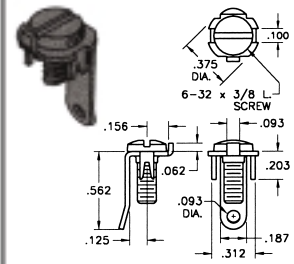
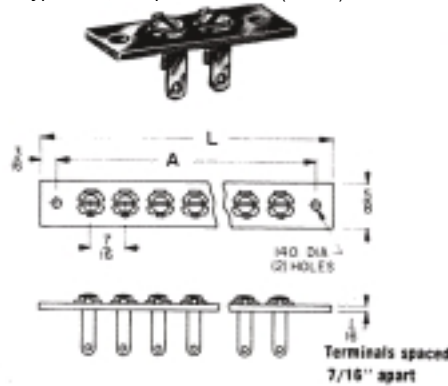
### MATERIAL SPECIFICATIONS FOR ALL BINDING POST STRIPS

FIBERGLASS: Reinforced Polyester NEMA Grade GPO-3 rated for 300°F. (155°C).

GEE: Glass Epoxy, MIL-I-24768/27 Type G-10, Temp. 300°F max. (155°C)

PBE: Paper base electrical, FED. LP-513 Type XP natural, Temp. 250°F max. (121°C)  
Terminals supplied on these strips

1/16" THICK MATERIAL 5/8" WIDE					
XP PHENOLIC CAT. NO.	GLASS EPOXY CAT. NO.	FIBER-GLASS CAT. NO.	L LENGTH	A MTG. C'TRS.	NO. TERM
4187	4177	4167	1 1/4	7/8	1
4188	4178	4168	1 11/16	1 5/16	2
4189	4179	4169	2 1/8	1 3/4	3
4190	4180	4170	2 9/16	2 3/16	4
4191	4181	4171	3	2 5/8	5
4192	4182	4172	3 7/16	3 1/16	6
4193	4183	4173	3 7/8	3 1/2	7
4194	4184	4174	4 5/16	3 15/16	8
4195	4185	4175	4 3/4	4 3/8	9
4196	4186	4176	5 3/16	4 13/16	10

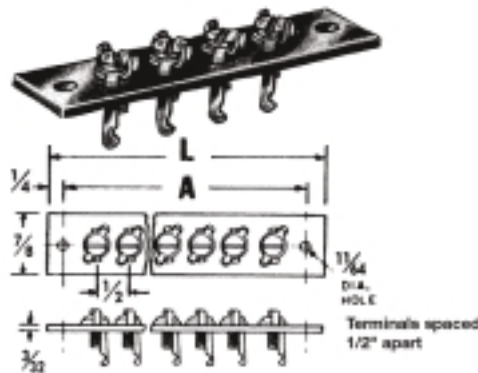


Terminal: .032 Steel, Tin Plated.  
Screw: Brass - Nickel Plated.

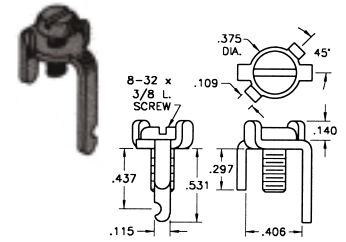
CAT. NO. 1248

## HEAVY DUTY BINDING POST STRIPS

3/32" THICK MATERIAL 7/8" WIDE				
GLASS EPOXY CAT. NO.	FIBER-GLASS CAT. NO.	L LENGTH	A MTG. C'TRS.	NO. TERM
4147	4157	1 1/2	1	1
4148	4158	2	1 1/2	2
4149	4159	2 1/2	2	3
4150	4160	3	2 1/2	4
4151	4161	3 1/2	3	5
4152	4162	4	3 1/2	6
4153	4163	4 1/2	4	7
4154	4164	5	4 1/2	8
4155	4165	5 1/2	5	9
4156	4166	6	5 1/2	10



Terminals supplied on these strips



Terminal: .064 Brass-Tin Plated.  
Screw: Brass - Tin Plated.

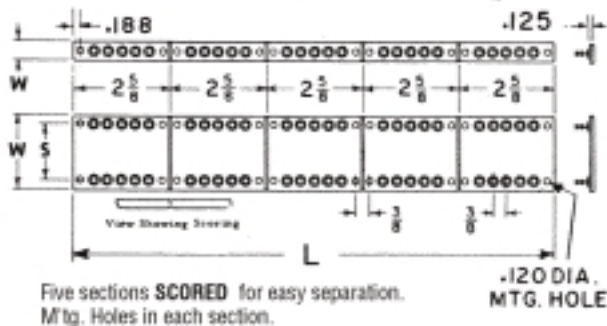
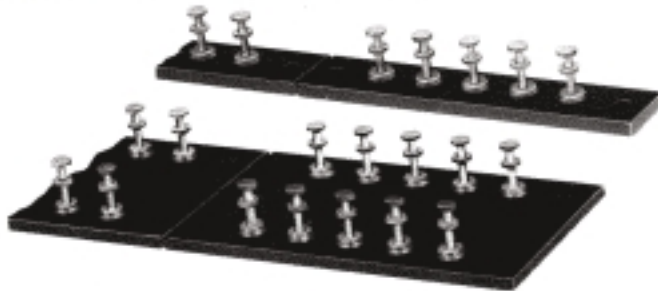
CAT. NO. 1209

## MILITARY TERMINAL BOARDS

Terminal boards meet military specifications per MS27249.

### SPECIFICATIONS:

Board Material: MIL-I-24768/27 TYPE GEE or TYPE GEB. 1/8" thick  
Terminal Studs: SE12XC09 PER MIL-T-55155



W	S	L	NO. OF TERMS EACH SIDE	MATERIAL GEB CAT. NO.	MATERIAL GEE CAT. NO.
1/2	Single Row	2 5/8	5	MS27249-1B1	MS27249-1E1
		5 1/4	10	MS27249-1B2	MS27249-1E2
		7 7/8	15	MS27249-1B3	MS27249-1E3
		10 1/2	20	MS27249-1B4	MS27249-1E4
1 1/2	1	13 1/8	25	MS27249-1B5	MS27249-1E5
		2 5/8	5	MS27249-2B1	MS27249-2E1
		5 1/4	10	MS27249-2B2	MS27249-2E2
		7 7/8	15	MS27249-2B3	MS27249-2E3
2	1 1/2	10 1/2	20	MS27249-2B4	MS27249-2E4
		13 1/8	25	MS27249-2B5	MS27249-2E5
		2 5/8	5	MS27249-3B1	MS27249-3E1
		5 1/4	10	MS27249-3B2	MS27249-3E2
2 1/2	2	7 7/8	15	MS27249-3B3	MS27249-3E3
		10 1/2	20	MS27249-3B4	MS27249-3E4
		13 1/8	25	MS27249-3B5	MS27249-3E5
		2 5/8	5	MS27249-4B1	MS27249-4E1
3	2 1/2	5 1/4	10	MS27249-4B2	MS27249-4E2
		7 7/8	15	MS27249-4B3	MS27249-4E3
		10 1/2	20	MS27249-4B4	MS27249-4E4
		13 1/8	25	MS27249-4B5	MS27249-4E5
		2 5/8	5	MS27249-5B1	MS27249-5E1
		5 1/4	10	MS27249-5B2	MS27249-5E2
		7 7/8	15	MS27249-5B3	MS27249-5E3
		10 1/2	20	MS27249-5B4	MS27249-5E4
		13 1/8	25	MS27249-5B5	MS27249-5E5



Designers' Choice

# HOUSINGS & HEADERS

## PLUG-IN HOUSINGS

Enhance the appearance and give a professional look to your products using these molded housings. Ideally suited for packaging relays, logic packages, networks and miniature circuitry. Durable, lightweight covers withstand vibrations and rough usage.

**HEADERS:** Molded of G.P. black phenolic. Fits standard sockets. **PINS:** Brass, Nickel Plated.

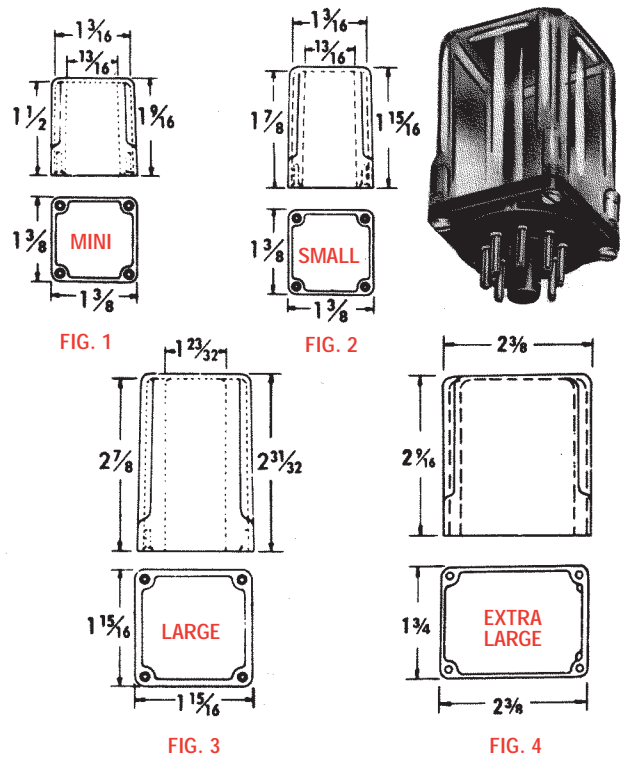
### MATERIAL CHARACTERISTICS:

- Variety of molded materials
- Good chemical resistance.

**POLYSTYRENE:** For general purpose use where high impact strength is not required and temperature would not exceed 170° F.

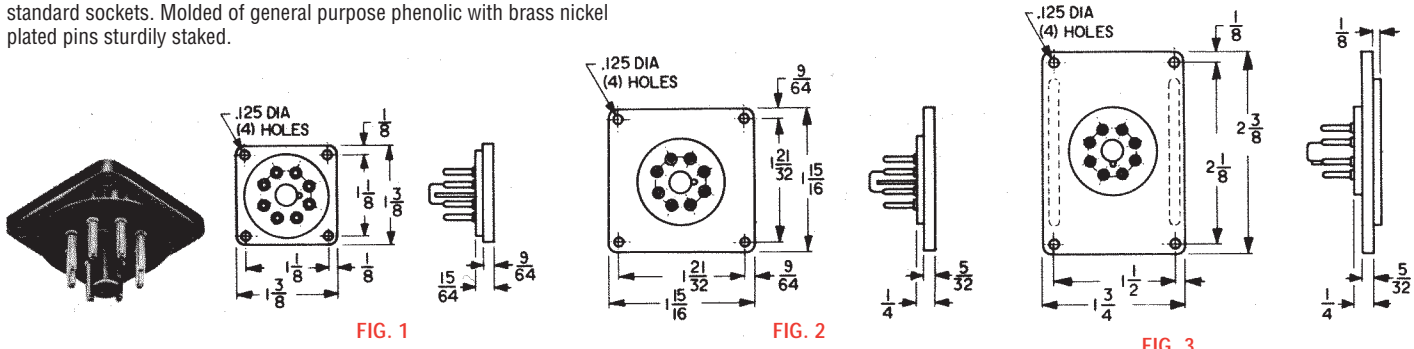
**LEXAN:** 3 Times the impact strength of Polystyrene. Excellent electrical properties. Use wherever temperatures of 280° F exist

Housing with Octal Header & 4 Screws CAT. NO.	Housing Only CAT. NO.	Fig. No.	Type	Material	Color
660	670	1	Mini	Lexan	Clear
661	671	1	Mini	Lexan	White
662	672	1	Mini	Polystyrene	Clear
641	675	1	Mini	Polystyrene	Opaque Black
663	673	2	Small	Lexan	Clear
664	674	2	Small	Lexan	White
665	676	2	Small	Polystyrene	Clear
643	647	2	Small	Polystyrene	Opaque Black
650	649	3	Large	Lexan	Clear
668	679	3	Large	Polystyrene	Clear
677	666	3	Large	Polystyrene	Opaque Black
639	640	4	Xtra-L'ge	Polystyrene	Clear
710	711	4	Xtra-L'ge	Polystyrene	Opaque Black
712	713	4	Xtra-L'ge	Lexan	Clear



## HEADERS FOR THE ABOVE HOUSINGS

**HEADERS:** Headers are available in a variety of pin configurations that fit standard sockets. Molded of general purpose phenolic with brass nickel plated pins sturdily staked.



1 3/8 Sq. Headers for Mini & Small Housing (Fig. 1 Above) CAT. NO.	Pin Configuration	1 15/16 Sq. Headers for Large Housing (Fig. 2 Above) CAT. NO.	1 3/4 x 2 3/8 Headers for Extra Large Housing (Fig. 3 Above) CAT. NO.
681	Octal	685	690
682	Nine Pin	Not Available	Not Available
683	Eleven Pin	686	714

SELF TAPPING SCREW  
CAT. NO. 689-For covers #4x3/8 Lg.

# ENGINEERING DATA

Designers' Choice



## DRILL SIZE DIAMETER TABLE

Diameter	Drill Size	Diameter	Drill Size	Diameter	Drill Size	Diameter	Drill Size
.0135	80	.0935	42	.2031	13/64	.4040	Y
.0145	79	.0938	3/32	.2040	6	.4062	13/32
.0156	1/64	.0960	41	.2055	5	.4130	Z
.0160	78	.0980	40	.2090	4	.4219	27/64
.0180	77	.0995	39	.2130	3	.4375	7/16
.0200	76	.1015	38	.2188	7/32	.4531	29/64
.0210	75	.1040	37	.2210	2	.4688	15/32
.0225	74	.1065	36	.2280	1	.4844	31/64
.0240	73	.1094	7/64	.2340	A	.5000	1/2
.0250	72	.1100	35	.2344	15/64	.5156	33/64
.0260	71	.1110	34	.2380	B	.5312	17/32
.0280	70	.1130	33	.2420	C	.5469	35/64
.0292	69	.1160	32	.2460	D	.5625	9/16
.0310	68	.1200	31	.2500	1/4	.5781	37/64
.0312	1/32	.1250	1/8	.2500	E	.5938	19/32
.0320	67	.1285	30	.2570	F	.6094	39/64
.0330	66	.1360	29	.2610	G	.6250	5/8
.0350	65	.1405	28	.2656	17/64	.6406	41/64
.0360	64	.1406	9/64	.2660	H	.6562	21/32
.0370	63	.1440	27	.2720	I	.6719	43/64
.0380	62	.1470	26	.2770	J	.6875	11/16
.0390	61	.1495	25	.2810	K	.7031	45/64
.0400	60	.1520	24	.2812	9/32	.7188	23/32
.0410	59	.1540	23	.2900	L	.7344	47/64
.0420	58	.1562	5/32	.2950	M	.7500	3/4
.0430	57	.1570	22	.2969	19/64	.7656	49/64
.0465	56	.1590	21	.3020	N	.7812	25/32
.0469	3/64	.1610	20	.3125	5/16	.7969	51/64
.0520	55	.1660	19	.3160	O	.8120	13/16
.0550	54	.1695	18	.3230	P	.8281	53/64
.0595	53	.1719	11/64	.3281	21/64	.8438	27/32
.0625	1/16	.1730	17	.3320	Q	.8594	55/64
.0635	52	.1770	16	.3390	R	.8750	7/8
.0670	51	.1800	15	.3438	11/32	.8906	57/64
.0700	50	.1820	14	.3480	S	.9062	29/32
.0730	49	.1850	13	.3580	T	.9219	59/64
.0760	48	.1875	3/16	.3594	23/64	.9375	15/16
.0781	5/64	.1890	12	.3680	U	.9531	61/64
.0785	47	.1910	11	.3750	3/8	.9688	31/32
.0810	46	.1935	10	.3770	V	.9844	63/64
.0820	45	.1960	9	.3860	W	1.0000	1/1
.0860	44	.1990	8	.3906	25/64		
.0890	43	.2010	7	.3970	X		

## MILLIMETER CONVERSION TABLE

MM	Decimal Inches	Fraction Inches	MM	Decimal Inches	Fraction Inches	MM	Decimal Inches	Fraction Inches	MM	Decimal Inches	Fraction Inches
0.1	.0039		6.5	.2559		12.8	.5039		19.2	.7559	
0.2	.0079		6.6	.2598		12.9	.5079		19.3	.7598	
0.3	.0118		6.7	.2638		13.0	.5118		19.4	.7638	
0.397	.0156	1/64	6.747	.2656	17/64	13.097	.5156	33/64	19.447	.7656	49/64
0.4	.0157		6.8	.2677		13.1	.5157		19.5	.7677	
0.5	.0197		6.9	.2717		13.2	.5197		19.6	.7717	
0.6	.0236		7.0	.2756		13.3	.5236		19.7	.7756	
0.7	.0276		7.1	.2795		13.4	.5276		19.8	.7795	
0.794	.0313	1/32	7.144	.2813	9/32	13.494	.5313	17/32	19.844	.7813	25/32
0.8	.0315		7.2	.2835		13.5	.5315		19.9	.7835	
0.9	.0354		7.3	.2874		13.6	.5354		20.0	.7874	
1.0	.0394		7.4	.2913		13.7	.5394		20.1	.7913	
1.1	.0433		7.5	.2953		13.8	.5433		20.2	.7953	
1.191	.0469	3/64	7.541	.2969	19/64	13.891	.5469	35/64	20.241	.7969	51/64
1.2	.0472		7.6	.2992		13.9	.5472		20.3	.7992	
1.3	.0512		7.7	.3031		14.0	.5512		20.4	.8031	
1.4	.0551		7.8	.3071		14.1	.5551		20.5	.8071	
1.5	.0591		7.9	.3110		14.2	.5591		20.6	.8110	
1.588	.0625	1/16	7.938	.3125	5/16	14.288	.5625	9/16	20.638	.8125	13/16
1.6	.0630		8.0	.3150		14.3	.5630		20.7	.8150	
1.7	.0669		8.1	.3189		14.4	.5669		20.8	.8189	
1.8	.0709		8.2	.3228		14.5	.5709		20.9	.8228	
1.9	.0748		8.3	.3268		14.6	.5748		21.0	.8268	
1.984	.0781	5/64	8.334	.3281	21/64	14.684	.5781	37/64	21.034	.8281	53/64
2.0	.0787		8.4	.3307		14.7	.5787		21.1	.8307	
2.1	.0827		8.5	.3346		14.8	.5827		21.2	.8346	
2.2	.0866		8.6	.3386		14.9	.5866		21.3	.8386	
2.3	.0906		8.7	.3425		15.0	.5906		21.4	.8425	
2.381	.0938	3/32	8.731	.3438	11/32	15.081	.5938	19/32	21.431	.8438	27/32
2.4	.0945		8.8	.3465		15.1	.5945		21.5	.8465	
2.5	.0984		8.9	.3504		15.2	.5984		21.6	.8504	
2.6	.1024		9.0	.3543		15.3	.6024		21.7	.8543	
2.7	.1063		9.1	.3583		15.4	.6063		21.8	.8583	
2.778	.1094	7/64	9.128	.3594	23/64	15.478	.6094	39/64	21.828	.8594	55/64
2.8	.1102		9.2	.3622		15.5	.6102		21.9	.8622	
2.9	.1142		9.3	.3661		15.6	.6142		22.0	.8661	
3.0	.1181		9.4	.3701		15.7	.6181		22.1	.8701	
3.1	.1220		9.5	.3740		15.8	.6220		22.2	.8740	
3.175	.1250	1/8	9.525	.3750	3/8	15.875	.6250	5/8	22.225	.8750	7/8
3.2	.1260		9.6	.3780		15.9	.6260		22.3	.8780	
3.3	.1299		9.7	.3819		16.0	.6299		22.4	.8819	
3.4	.1339		9.8	.3858		16.1	.6339		22.5	.8858	
3.5	.1378		9.9	.3898		16.2	.6378		22.6	.8898	
3.572	.1406	9/64	9.922	.3906	25/64	16.272	.6406	41/64	22.622	.8906	57/64
3.6	.1417		10.0	.3937		16.3	.6417		22.7	.8937	
3.7	.1457		10.1	.3976		16.4	.6457		22.8	.8976	
3.8	.1496		10.2	.4016		16.5	.6496		22.9	.9016	
3.9	.1535		10.3	.4055		16.6	.6535		23.0	.9055	
3.969	.1563	5/32	10.319	.4063	13/32	16.669	.6563	21/32	23.019	.9063	29/32
4.0	.1575		10.4	.4094		16.7	.6575		23.1	.9094	
4.1	.1614		10.5	.4134		16.8	.6614		23.2	.9134	
4.2	.1654		10.6	.4173		16.9	.6654		23.3	.9173	
4.3	.1693		10.7	.4213		17.0	.6693		23.4	.9213	
4.366	.1719	11/64	10.716	.4219	27/64	17.066	.6719	43/64	23.416	.9219	59/64
4.4	.1732		10.8	.4252		17.1	.6732		23.5	.9252	
4.5	.1772		10.9	.4291		17.2	.6772		23.6	.9291	
4.6	.1811		11.0	.4331		17.3	.6811		23.7	.9331	
4.7	.1850		11.1	.4370		17.4	.6850		23.8	.9370	
4.763	.1875	3/16	11.113	.4375	7/16	17.463	.6875	11/16	23.813	.9375	15/16
4.8	.1890		11.2	.4409		17.5	.6890		23.9	.9409	
4.9	.1929		11.3	.4449		17.6	.6929		24.0	.9449	
5.0	.1969		11.4	.4488		17.7	.6968		24.1	.9488	
5.1	.2008		11.5	.4528		17.8	.7008		24.2	.9528	
5.159	.2031	13/64	11.509	.4531	29/64	17.859	.7031	45/64	24.209	.9531	61/64
5.2	.2047		11.6	.4567		17.9	.7047		24.3	.9567	
5.3	.2087		11.7	.4606		18.0	.7087		24.4	.9606	
5.4	.2126		11.8	.4646		18.1	.7126		24.5	.9646	
5.5	.2165		11.9	.4685		18.2	.7165		24.6	.9685	
5.556	.2188	7/32	11.906	.4688	15/32	18.256	.7188	23/32	24.606	.9688	31/32
5.6	.2205		12.0	.4724		18.3	.7205		24.7	.9724	
5.7	.2244		12.1	.4764		18.4	.7244		24.8	.9764	
5.8	.2283		12.2	.4803		18.5	.7283		24.9	.9803	
5.9	.2323		12.3	.4843		18.6	.7323		25.0	.9843	
5.953	.2344	15/64	12.303	.4844	31/64	18.653	.7344	47/64	25.003	.9844	63/64
6.0	.2362		12.4	.4882		18.7	.7362		25.1	.9882	
6.1	.2402		12.5	.4921		18.8	.7402		25.2	.9921	
6.2	.2441		12.6	.4961		18.9	.7441		25.3	.9961	
6.3	.2480		12.7	.5000		19.0	.7480		25.400	1.0000	1
6.350	.2500	1/4	12.700	.5000	1/2	19.050	.7500	3/4			
6.4	.2520					19.1	.7520				

## SCREW/STUD CLEARANCE HOLE TABLE

Screw/Stud Size	Screw/Stud Dia. Max.	Recommended Clearance Hole Dia.
0	.060	.067
1	.073	.078
2	.086	.093
3	.099	.105
4	.112	.120
5	.125	.130
6	.138	.144
8	.164	.169
10	.190	.196
12	.216	.220
14	.242	.250
1/4	.250	.257



*Designers' Choice*

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68		22
69 thru 71		13
72		23
78 thru 80		13
81		22
82		12
83		23
84		22
85		23
86 thru 91		13
92		12
93 thru 95		13
96		22
97 thru 100		13
103 thru 105		6
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105-3		9
106 thru 107		6
108		19
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109		17
109-2		9
110		17
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134 thru 135		17
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154 thru 156		16
157		17
158		18
160		17
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163		16
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202		11
203		16
204		11
205		16
206 thru 208		12
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269 thru 274		22
288		11
290 thru 292		11
301		6
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340 thru 349		90
351 thru 359		47
360 thru 396		48
397 thru 438		46
452		72
453 thru 473		48
476		73
480 thru 496		53
499 thru 502		6
510 thru 526		53
530 thru 538		53
540 thru 548		53
552		72
561 thru 570		70
571 thru 573		69
574		70
575		73
576		70
577		69
580		70
593 thru 594		21
595		9
603 thru 604		100
607		100
609		100
611 thru 612		60
613		61
614		60
615		61
616 thru 617		60
618 thru 620		61
621		60
622 thru 627		61
628 thru 629		9
630 thru 631		60
633		61
634		60
635 thru 636		21
637		9
639 thru 641		102
643		102
645		102
647		102
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1520		80
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1533		81
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1540		81
1545		81
1546		45
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1556		61
1557		81
1559		81
1560 thru 1561		45
1562 thru 1563		81
1564 thru 1571		61
1572 thru 1573		80
1574 thru 1575		81
1582 thru 1583		81
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1589 thru 1591		45
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1593		80
1595		81
1596		45
1598		80
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1726	.....	89	2171	.....	14	4091 thru 4094	.....	71	5033 thru 5040	.....	35	8311 thru 8342	.....	51
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1734	.....	45	2182	.....	14	4096 thru 4097	.....	71	5048	.....	35	8400 thru 8438	.....	43
1740	.....	45	2185 thru 2192	.....	14	4108 thru 4109	.....	71	5060 thru 5065	.....	46	8440 thru 8442	.....	48
1743	.....	45	2194 thru 2195	.....	14	4116 thru 4120	.....	100	5070 thru 5083	.....	88	8447 thru 8457	.....	59
1746	.....	45	2198 thru 2199	.....	14	4147 thru 4196	.....	101	5201 thru 5204	.....	10	8458 thru 8467	.....	58
1749	.....	45	2201 thru 2221	.....	44	4225 thru 4232	.....	97	5209	.....	10	8470 thru 8496	.....	84
1752	.....	45	2222 thru 2233	.....	18	4243	.....	27	5211 thru 5214	.....	10	8554 thru 8569	.....	57
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1761	.....	45	2260 thru 2264	.....	45	4245	.....	27	5230 thru 5231	.....	9	8620 thru 8644	.....	87
1775	.....	45	2270 thru 2274	.....	45	4245C	.....	26	6000 thru 6011	.....	76	8650 thru 8689	.....	50
1784	.....	45	2314	.....	46	4246 thru 4247	.....	25	6012 thru 6035	.....	74	8692	.....	50
1790	.....	45	2315	.....	44	4250	.....	27	6036 thru 6071	.....	75	8700 thru 8711	.....	56
1792	.....	45	2400 thru 2457	.....	55	4258 thru 4260	.....	46	6072 thru 6079	.....	72	8712 thru 8717	.....	43
1796	.....	45	2460 thru 2482	.....	20	4313 thru 4324	.....	43	6080 thru 6081	.....	73	8718 thru 8729	.....	40
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1825	.....	44	3075 thru 3077	.....	88	4469 thru 4474	.....	32	7012 thru 7019	.....	71	9201	.....	62
1827 thru 1834	.....	44	3101 thru 3198	.....	90	4513 thru 4516	.....	92	7020 thru 7022	.....	70	9201-1	.....	63
1836 thru 1839	.....	44	3200 thru 3241	.....	90	4527	.....	26	7140 thru 7151	.....	53	9202	.....	62
1846 thru 1848	.....	44	3347 thru 3373	.....	90	4590 thru 4596	.....	92	7156 thru 7158	.....	53	9202-1	.....	63
1853	.....	44	3381 thru 3391	.....	88	4600 thru 4603	.....	93	7162 thru 7164	.....	53	9203	.....	62
1855 thru 1859	.....	44	3396 thru 3400	.....	97	4606 thru 4609	.....	93	7170 thru 7181	.....	53	9203-1 thru 9203-2	.....	63
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1919 thru 1925	.....	46	3457 thru 3477	.....	46	4632 thru 4635	.....	95	7220 thru 7225	.....	43	15101 thru 15130	.....	99
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1927 thru 1933	.....	42	3501 thru 3503	.....	83	4640	.....	91	7311 thru 7319	.....	77	15301 thru 15330	.....	99
1934 thru 1938	.....	46	3505 thru 3507	.....	83	4644	.....	91	7325 thru 7333	.....	77	15401 thru 15415	.....	100
1942	.....	46	3510 thru 3511	.....	25	4651 thru 4683	.....	91	7338 thru 7339	.....	77	15431 thru 15445	.....	99
1944 thru 1964	.....	43	3513 thru 3516	.....	25	4684	.....	94	7351 thru 7382	.....	51	15501 thru 15515	.....	100
1967 thru 1968	.....	82	3517 thru 3521	.....	24	4690 thru 4696	.....	95	7600 thru 7611	.....	85	15531 thru 15545	.....	99
1986 thru 2001	.....	82	3522	.....	28	4697	.....	94	7620 thru 7640	.....	85	MS272491B1 thru 5B5	.....	101
2002 thru 2005	.....	29	3523 thru 3524	.....	27	4698	.....	90	7661 thru 7678	.....	48	MS272491E1 thru 5E5	.....	101
2025 thru 2031	.....	44	3525	.....	32	4699 thru 4701	.....	95	7680 thru 7688	.....	90	SPR-8	.....	47
2032 thru 2036	.....	46	3526	.....	27	4702	.....	90	7690 thru 7693	.....	39	SPR-13	.....	47
2037 thru 2053	.....	57	3527	.....	26	4703 thru 4705	.....	95	7700 thru 7702	.....	39	SPR-34	.....	47
2060 thru 2073	.....	41	3528	.....	32	4706	.....	94	7710 thru 7720	.....	48	STH-14	.....	47
2087 thru 2099	.....	43	3529 thru 3533	.....	25	4711	.....	90	7775	.....	38	STH-19	.....	47
2101	.....	15	3534	.....	32	4712 thru 4713	.....	95	7778	.....	38	STH-22	.....	47
2103	.....	19	3535	.....	25	4716	.....	95	7779 thru 7783	.....	39	STR-15	.....	47
2104	.....	15	3536 thru 3543	.....	27	4724 thru 4731	.....	95	7784 thru 7787	.....	38	STR-35	.....	47
2105	.....	19	3544	.....	28	4732 thru 4738	.....	94	7802 thru 7816	.....	29	TL-11	.....	96
2109 thru 2110	.....	15	3545 thru 3548	.....	32	4800 thru 4841	.....	43	7822 thru 7826	.....	29	TL-19 thru TL-21	.....	45
2113 thru 2114	.....	15	3549 thru 3550	.....	28	4850 thru 4870	.....	45	7832 thru 7836	.....	29			
2116	.....	15	3551	.....	32	4900	.....	31	8100 thru 8113	.....	86			
2119 thru 2131	.....	43	3560	.....	28	4901 thru 4902	.....	30	8120 thru 8134	.....	86			
2132	.....	15	3561 thru 3562	.....	24	4903 thru 4904	.....	31	8140 thru 8154	.....	86			
2134 thru 2135	.....	15	3564	.....	28	4906 thru 4907	.....	31	8160 thru 8173	.....	86			
2139 thru 2140	.....	14	3565 thru 3566	.....	26	4908	.....	30	8189 thru 8191	.....	39			
2142	.....	15	3567	.....	25	4950 thru 4952	.....	34	8195 thru 8199	.....	38			
2144 thru 2145	.....	15	4000 thru 4004	.....	77	4953 thru 4955	.....	35	8200 thru 8253	.....	78			

FOR  
CATALOG NUMBERS  
NOT LISTED:  
Refer to the  
New Products Section  
in front of this  
Catalog or contact  
Customer Service

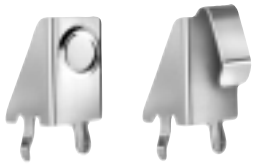


# NEW PRODUCTS A

Designers' Choice



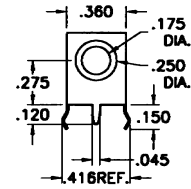
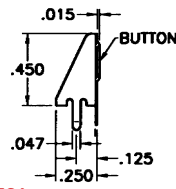
## "AA" • "N" SIZE PC BUTTON & LEAF-SPRING CONTACTS



596

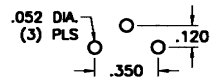
590

- Ideal for "AA" and "N" size batteries
- Space saving design installs directly onto the PC board
- Suitable for .062 and .093 thick PC boards
- Reliable leaf-spring assures low contact resistance
- Ideal for self-contained battery compartments

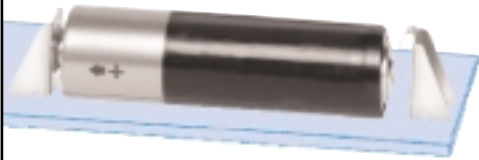


POSITIVE

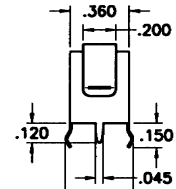
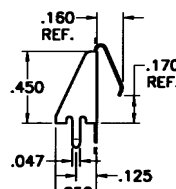
Mounting Detail



CAT. NO. 596

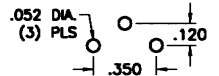


MATERIAL: .012 Thick, Spring Steel, Tin Plate



NEGATIVE

Mounting Detail

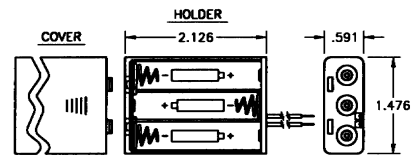


CAT. NO. 590

## DENSI-PAK® BATTERY HOLDERS

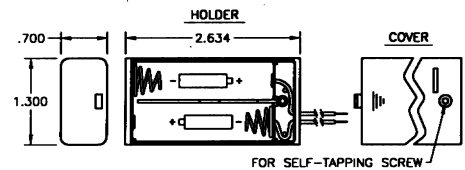


For "AAA"



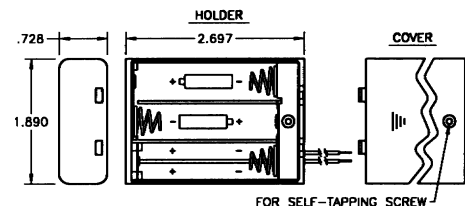
CAT. NO. 2484 For (3) "AAA"

For "AA"



CAT. NO. 2490 For (2) "AA"

For "AA"



CAT. NO. 2487 For (3) "AA"

- Supports high density packaging on or off board, positions anywhere for easy access to battery
- Economical design
- Batteries securely held in place to assure a positive connection and maintain a low contact resistance
- Contact springs self-adjust to variations in battery length
- Snap-on cover fully protects battery
- Recessed or fully enclosed contacts
- Withstands shock and vibration

### SPECIFICATIONS

- Holder: A.B.S.
- Springs: Spring Steel, Nickel Plate
- Wires (Red & Black): 6 inches long, #26AWG, Tinned, .187 end strip UL/CSA1007

## 9 VOLT PC LEAF-SPRING CONTACT

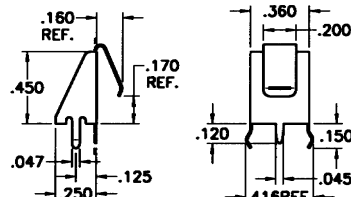


NEW for 6.8mm dia. button cell

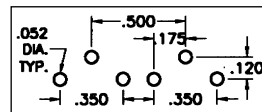
Refer to Catalog M1 (Page 8) for New Coin Cell Battery Retainers & Holders



- Ideal "Slide-In" contact for easy installation and removal of 9 Volt batteries
- Space saving design installs directly onto the PC board
- Suitable for .062 and .093 thick PC boards
- Reliable leaf-spring assures low contact resistance
- Ideal for self-contained battery compartments

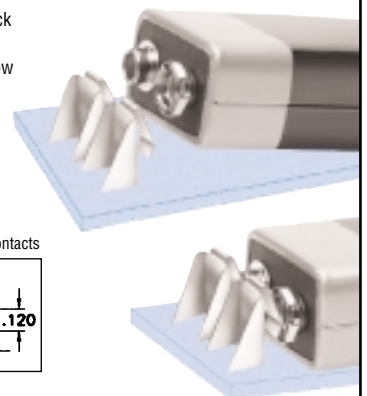


9 Volt Mounting Detail For Two Contacts



CAT. NO. 590

MATERIAL: .012 Thick, Spring Steel, Tin Plate





Designers' Choice

# NEW PRODUCTS B

## THRU-HOLE & SURFACE MOUNT AUTOMOTIVE BLADE FUSE CLIPS

- Available for maxi, standard and mini blade fuses
- Thru hole PC mountable, maintains position during wave soldering
- Space saving, low profile designs
- Horizontal and vertical mini blade clips for Littelfuse ATO 297 series and Bussmann ATM series
- Withstands the rigors of shock and vibration
- Horizontal and vertical standard blade clips for Littelfuse ATO 257 series and Bussmann ATC series
- Holds fuse securely, even after multiple insertions
- Vertical maxi blade clips for Littelfuse MAXI series and Bussmann MAX series.
- Current Rating: 30 Amps or as noted

### NEW FOR .110 x .032 MINI BLADE FUSES

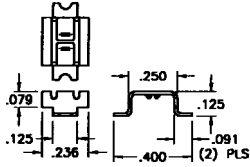


.016 Brass, Tin Plate

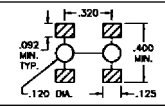
- Low Profile

#### Vertical-Surface Mount

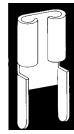
CAT. NO. 3563  
CAT. NO. 3563TR  
(On Tape & Reel)



Pad Layout For Two Clips

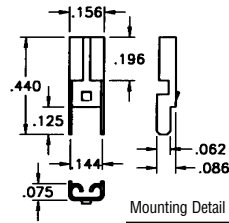


### FOR .110 x .032 MINI BLADE FUSES

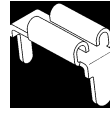
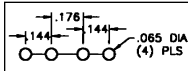


.012 Brass, Nickel Plate

CAT. NO. 3544 - Vertical

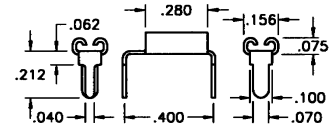


Mounting Detail For Two Clips

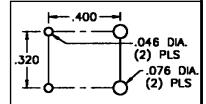


.012 Brass, Nickel Plate

CAT. NO. 3549 - Horizontal



Mounting Detail For Two Clips



### FOR .205 x .025 STANDARD BLADE FUSES

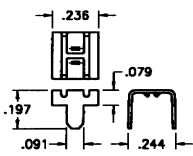


.016 Brass, Tin Plate

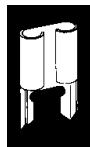
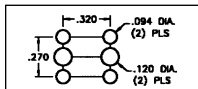
- Low Profile

#### Vertical-Thru Hole Mount

CAT. NO. 3564



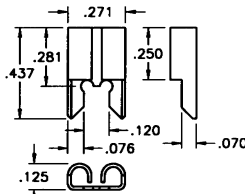
Mounting Detail For Two Clips



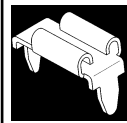
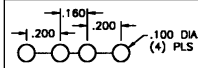
.016 Brass, Nickel Plate

Current Rating: 40 Amps

CAT. NO. 3522 - Vertical



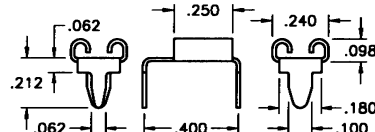
Mounting Detail For Two Clips



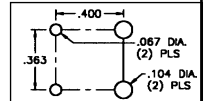
.012 Brass, Nickel Plate

Current Rating: 40 Amps

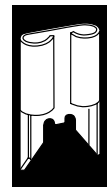
CAT. NO. 3550 - Horizontal



Mounting Detail For Two Clips



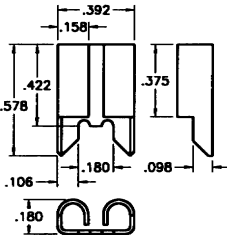
### NEW FOR .312 x .032 MAXI BLADE FUSES



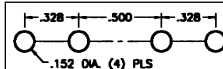
.020 Copper, Nickel Plate

Current Rating: 80 Amps

Vertical  
CAT. NO. 3555



Mounting Detail For Two Clips

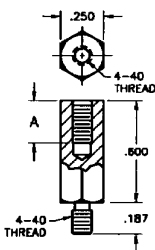


## MALE/FEMALE STANDOFFS

### FOR PC/104 & PC/104-PLUS MODULES



Brass



Nylon

CAT. NO.	A	MATERIAL
8799	.250	Brass, Nickel Plate
4799	.187	Nylon 6/6

## PC SCREW TERMINAL

### EXTENDED

#### SPECIFICATIONS

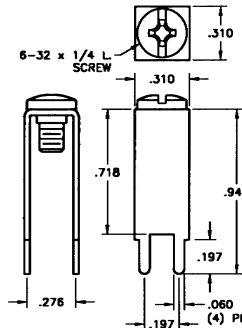
Rated: 15 Amps

Terminal:

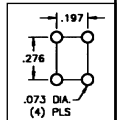
.032 Thick Brass, Tin Plate

Binding Head Screw:

Brass, Nickel Plate



Mounting Detail



CAT. NO. 7697 (Screw Supplied Unassembled)

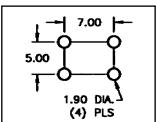
CAT. NO. 7699 (Screw Captivated)

CAT. NO. 7789 (Supplied Less Screw)

## METRIC - "SNAP-IN" PC SCREW TERMINALS



Mounting Detail



#### SPECIFICATIONS

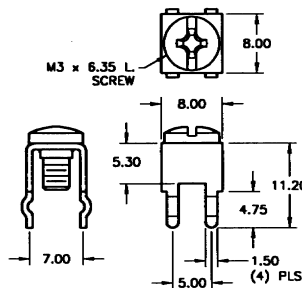
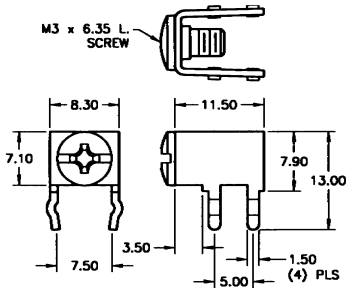
Rated: 15 Amps

Terminal:

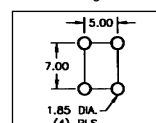
0.81 Thick Brass, Tin Plate

Binding Head Screw:

Brass, Nickel Plate



Mounting Detail



CAT. NO. 7689 (Screw Supplied Unassembled)

CAT. NO. 7695 (Screw Installed & Captivated)

CAT. NO. 7790 (Supplied Less Screw)

HORIZONTAL

VERTICAL

NOTE: All dimensions are in millimeters

CAT. NO. 7698 (Screw Supplied Unassembled)

CAT. NO. 7696 (Screw Installed & Captivated)

CAT. NO. 7788 (Supplied Less Screw)



keyelco.com

*50<sup>th</sup> Anniversary*

ISO 9002 CERTIFIED QUALITY SYSTEM

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ELECTRONICS CORP.

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