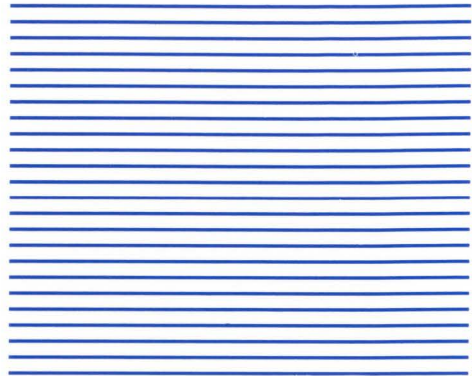




# AMP

## A big resource. From a local source.



This is a short form catalog showing the most popular AMP product lines. The part numbers listed represent the items most often purchased and those which will meet a majority of your requirements. If the items shown in this catalog do not meet your application needs, refer to the AMP catalogs listed at the bottom of each page. These catalogs contain a more complete product offering and will provide you with detailed specification information on AMP products. Catalogs are available from your local AMP Distributor.

AMP Electronic Distributors can provide these, and many other, AMP products. Call your local source for more information on interconnection devices from AMP.

# AMP Interconnecting ideas

Specifications subject to change. Consult AMP Incorporated for latest design specifications.  
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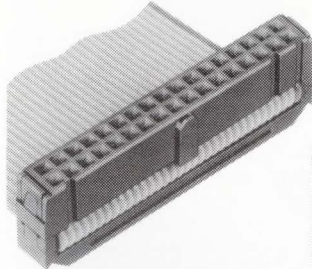
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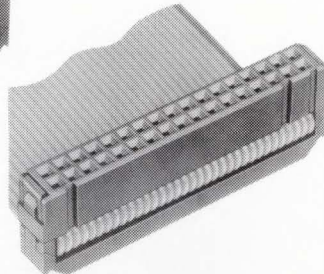


## NOVO RECEPTACLES

- Positive, uniform latching of contacts and housing with cover eliminates cover warpage—reduces need for additional strain relief.
- Insulation displacement connections for ribbon cable, woven ribbon, and other flat cable with conductors on .050" centers.
- Terminate conductor sizes 28 and 26 AWG solid and stranded, and 30 AWG solid.
- Self registration of wires by fluted covers and tooling ensures proper contact and cable alignment.
- Also available in tin or 15 microinches selective gold plating.
- .100" × .100" center line spacing.
- Receptacles with recessed covers provide positive locking feature for ejection style headers with latches.
- One ampere rating per contact.



Military Polarized Housing Assembly with Recessed Cover (Preassembled) and Strain Relief



Center & Military Polarized Housing Assembly with Recessed Cover (preassembled) and Strain Relief

## CENTER & MILITARY POLARIZED RECEPTACLES\* .100" × .100" (2.54 × 2.54 mm) CENTERS

Gold duplex plated contacts: .000030" (0.00076 mm) gold on mating area; .000100-.000200" (0.00254-0.00508 mm) bright tin-lead on termination end, with entire contact underplated with .000050" (0.00127 mm) nickel. Contacts mate with .025" (0.64 mm) square or round pins with .245" (6.22 mm) max. and .195" (4.95 mm) min. lengths.

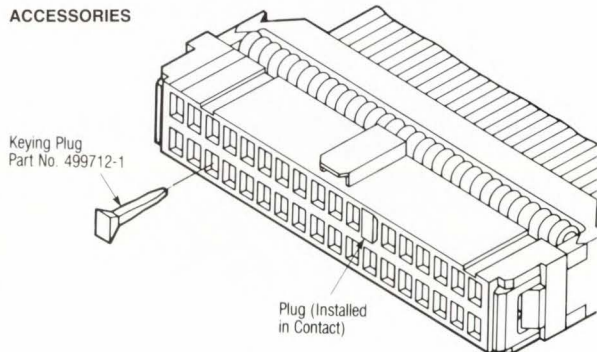
No. of Pos.	Overall Length In (mm)	Strain Relief Part No.	Receptacle Kit No. (Preassembled) Without Strain Relief	
			Center & Military Polarized*	Military Polarized
10	.680 (17.27)	499252-5	746288-1	746290-1
14	.880 (22.35)	499252-9	746288-2	746290-2
16	.980 (24.89)	499252-8	746288-3	746290-3
20	1.180 (29.97)	499252-2	746288-4	746290-4
26	1.480 (37.59)	499252-3	746288-6	746290-6
34	1.880 (47.75)	499252-6	746288-8	746290-8
40	2.180 (55.37)	499252-1	746288-9	746290-9
50	2.680 (68.07)	499252-4	1-746288-0	1-746290-0
60	3.180 (80.77)	499252-7	1-746288-1	1-746290-1
64	3.380 (85.85)	1-499252-3	1-746288-2	1-746290-2

\*These receptacles must be used in applications requiring center polarization.

## MATERIAL AND FINISH

Housing, Cover and Strain Relief: Black thermoplastic, 94V-0 rated.  
Contacts: Phosphor bronze.  
NOTE: Other sizes and styles available; consult your local distributor.

## ACCESSORIES

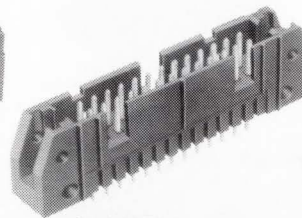


## UNIVERSAL EJECTION STYLE PIN HEADER ASSEMBLIES

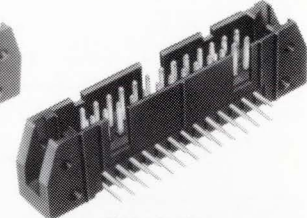
DUAL, CENTER AND MILITARY POLARIZED  
.100" × .100" (2.54 × 2.54 mm) CENTERS

### FEATURES

- Broad line of products.
- Snap-in ejection latch accessory.
- One-hand ejection of mated systems using latches with push tabs.
- Choice of three tail lengths, in vertical and right-angle versions.
- Accept center bar, double bar, and military style polarized receptacles on .100" × .100" centerline.
- Complete pin protection on all four sides; three-sided headers also available.
- Duplex plated pins facilitate soldering to a PC board, while retaining noble plating on mating end.
- Pin pattern on .100" centers; standard mounting holes.
- All plastic system prevents shorting; all plastic parts made of 94V-0 rated materials.
- Pin material: Brass or phosphor bronze.
- Pins plated .000030" gold over contact area, and .000100" to .000200" tin over solder on termination areas; both have nickel underplating; also available in tin or .000015" gold plating.



Straight Thru 4-Sided .025" (0.64 mm) Sq. Posts



Right-Angle 4-Sided .025" (0.64 mm) Sq. Posts

## PIN HEADER ASSEMBLY 0.000030" GOLD DUPLEX PLATED POSTS

No. of Pos.	Straight Thru	Right Angle
10	102154-1	102160-1
14	102154-2	102160-2
16	102154-3	102160-3
20	102154-4	102160-4
26	102154-6	102160-6
34	102154-8	102160-8
40	102154-9	102160-9
50	102154-0	102160-0
60	1-102154-1	1-102160-1
64	1-102154-2	1-102160-2

## MATERIAL AND FINISH

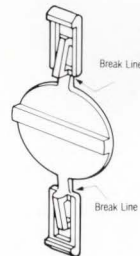
Housing and Latches: Black thermoplastic, 94V-0 rated.  
Contacts: Phosphor bronze, duplex plated, 0.000200" (0.00254-0.00508 mm) bright tin on termination end and 0.000030" (0.00076 mm) gold on post pin mating end, with entire contact underplated with 0.000050" (0.00127 mm) nickel.  
NOTE: Other sizes and styles available; contact your local distributor.

## ACCESSORIES

### LATCHES FOR EJECTION STYLE PIN HEADER ASSEMBLIES

Note: Two latches required per pin header assembly.

Use Long Latches for AMP Receptacles with Recessed Cover and Strain Relief



Part No. 102320-1 Without Push Tabs



Part No. 102186-1 With Push Tabs

Use Short Latches for AMP Receptacles without Strain Relief



Part No. 102312-1 Without Push Tabs



Part No. 102185-1 With Push Tabs

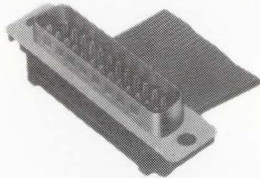


## AMP-LATCH HDF SUBMINIATURE D CONNECTORS

- Mate with industry-standard D-subminiature interfaces.
- 9, 15, 25, and 37 positions available in all-plastic or metal shell plug and receptacle versions.
- 50-position plug and receptacle in metal shell with 4-40 threaded inserts only.
- Connectors also available with 4-40 threaded inserts.
- Low profile of .578" when terminated.
- Optional strain relief provides 180° cable exit capability.
- Shielded version also available.
- Metal shell plugs have grounding indents for positive shell contact.

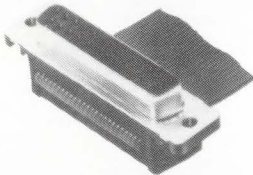
### PLUG ASSEMBLIES—METAL SHELL

No. of Contact Positions	Plug Assembly	Strain Relief
9	747306-4	745275-4
15	747306-3	745275-3
25	747306-2	745275-2
37	747306-1	745275-1
50	746790-1	746785-1



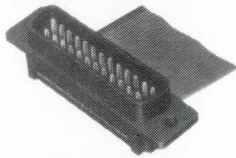
### RECEPTACLE ASSEMBLIES—METAL SHELL

No. of Contact Positions	Receptacle Assembly	Strain Relief
9	747303-4	745275-4
15	747303-3	745275-3
25	747303-2	745275-2
37	747303-1	745275-1
50	746789-1	746785-1



### PLUG ASSEMBLIES—ALL PLASTIC

No. of Contact Positions	Plug Assembly	Strain Relief
9	747321-4	745275-4
15	747321-3	745275-3
25	747321-2	745275-2
37	747321-1	745275-1



### RECEPTACLE ASSEMBLIES—ALL PLASTIC

No. of Contact Positions	Receptacle Assembly	Strain Relief
9	747318-4	745275-4
15	747318-3	745275-3
25	747318-2	745275-2
37	747318-1	745275-1



### MATERIAL AND FINISH

**Front Shell:** Steel, tin plated.

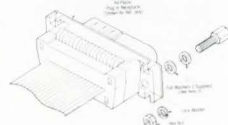
**Housing, Cover and Strain Relief:** Black thermoplastic, 94V-0 rated.

**Pin Contacts:** Phosphor bronze; duplex plated .000030" (0.00076 mm) gold on mating end; .000100-.000200" (0.00245-0.00508 mm) bright tin-lead on termination end, with entire contact underplated with .000050" (0.00127 mm) nickel.

### LOW PROFILE HDF CONNECTOR ACCESSORIES

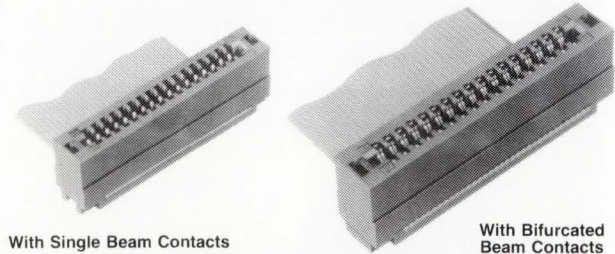


Metal screw retainers  
Part No. 746881-1



Female Screwlocks  
Part No. 205817-1

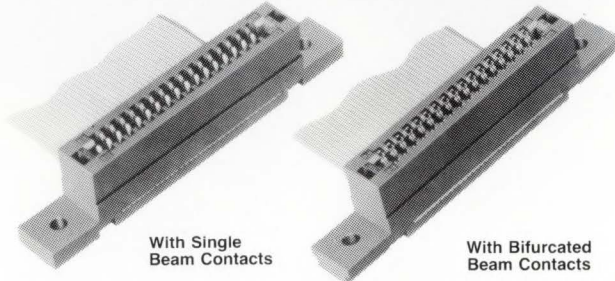
## AMP-LATCH CARD EDGE CONNECTORS HOUSING ASSEMBLIES WITH COVERS (PREASSEMBLED) WITHOUT MOUNTING EARS



With Single Beam Contacts

With Bifurcated Beam Contacts

## HOUSING ASSEMBLIES WITH COVERS (PREASSEMBLED) WITH ROUND HOLE MOUNTING EARS



With Single Beam Contacts

With Bifurcated Beam Contacts

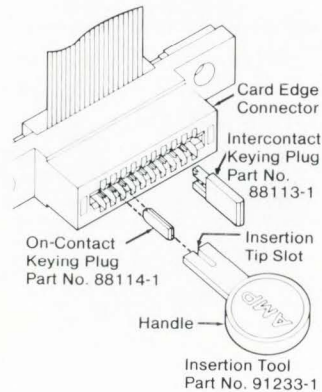
No. of Pos.	Connector Kit No. (Preassembled)			
	Without Mounting Ears		With Mounting Ears	
	With Single Beam Contacts	With Bifurcated Beam Contacts	With Single Beam Contacts	With Bifurcated Beam Contacts
10	746428-8	499560-8	746426-8	499559-8
14	746428-9	499560-9	746426-9	499559-9
20	746428-6	499560-6	746426-6	499559-6
26	746428-5	499560-5	746426-5	499559-5
30	746428-4	499560-4	746426-4	499559-4
34	746428-3	499560-3	746426-3	499559-3
40	746428-2	499560-2	746426-2	499559-2
50	746428-1	499560-1	746426-1	499559-1
60	746428-7	499560-7	746426-7	499559-7

### MATERIAL AND FINISH

**Housing and Cover:** Black thermoplastic, 94V-0 rated.

**Contacts:** Phosphor bronze, duplex plated .000030" (0.00076 mm) gold on PC board mating end; .000100-.000200" (0.00245-0.00508 mm) bright tin-lead on termination end, with entire contact underplated with .000050" (0.00127 mm) nickel.

### ACCESSORIES



Card Edge Connector  
Intercontact Keying Plug  
Part No. 88113-1

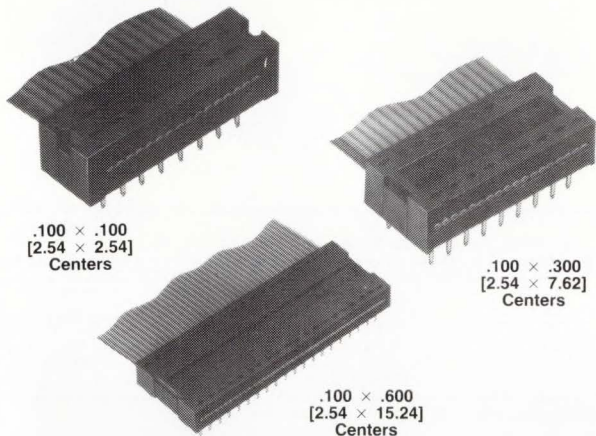
On-Contact Keying Plug  
Part No. 88114-1

Handle  
Insertion Tool  
Part No. 91233-1

For more information on AMP-LATCH Connectors, consult the following AMP Literature: Catalog 404587-6 "AMP-LATCH IDC Connectors and Ribbon Cable", Catalog 73-177 "AMP-LATCH Ribbon Cable Connector System", AMP Standard Products Catalog, AMP Engineering Guide.

## DIP PLUGS

- Pre-assembled kits ready for one-step termination of all conductors.
- .100" x .100" DIP plugs—tin plated only; .100" x .300" and .100" x .600" DIP plugs available in 30 micronches selective gold or tin plating (15 micronches selective gold also available).
- Three centerline patterns cover a wide range of applications.

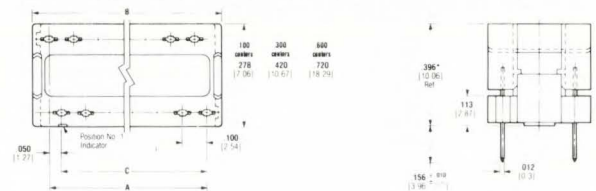


No. of Pos.	Overall Length In. (mm)	Contact Plating	Plug Kit No. (Preassembled)
<b>.100" x .100"</b>			
10	.680 (17.27)	Tin*	746610-1
14	.880 (22.35)	Tin*	746610-2
16	.980 (24.89)	Tin*	746610-3
20	1.180 (29.97)	Tin*	746610-4
24	1.380 (35.05)	Tin*	746610-5
26	1.480 (37.59)	Tin*	746610-6
30	1.680 (42.67)	Tin*	746610-7
34	1.880 (47.75)	Tin*	746610-8
40	2.180 (55.37)	Tin*	746610-9
44	2.380 (60.45)	Tin*	1-746610-3
50	2.680 (68.07)	Tin*	1-746610-0
60	3.180 (80.77)	Tin*	1-746610-1
64	3.380 (85.85)	Tin*	1-746610-2
<b>.100" x .300"</b>			
8	.488 (12.40)	Duplex#	746611-1
8	.488 (12.40)	Tin*	746613-1
14	.788 (20.02)	Duplex#	746611-2
14	.788 (20.02)	Tin*	746613-2
16	.888 (22.56)	Duplex#	746611-3
16	.888 (22.56)	Tin*	746613-3
18	.988 (25.10)	Duplex#	746611-4
18	.988 (25.10)	Tin*	746613-4
20	1.188 (30.17)	Duplex#	746611-5
20	1.188 (30.17)	Tin*	746613-5
<b>.100" x .600"</b>			
24	1.288 (32.72)	Duplex#	746614-1
24	1.288 (32.72)	Tin*	746616-1
28	1.488 (37.80)	Duplex#	746614-2
28	1.488 (37.80)	Tin*	746616-2
40	2.088 (53.04)	Duplex#	746614-3
40	2.088 (53.04)	Tin*	746616-3

\*.000100-.000200" (0.00254-0.00508 mm) bright tin-lead over .000050" (0.00127 mm) nickel on entire contact.  
 #.000030" (0.00076 mm) gold on cable termination end; .000100-.000200" (0.00254-0.00508 mm) bright tin-lead on pin end, with entire contact underplated .000050" (0.00127 mm) nickel.

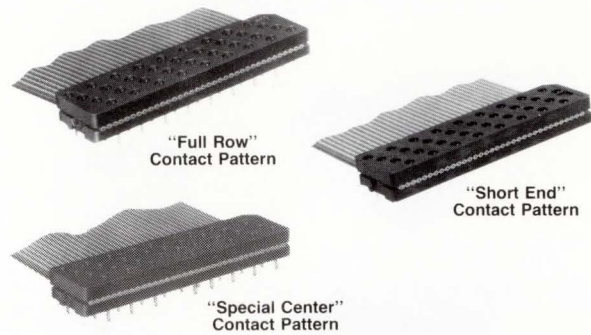
## MATERIAL AND FINISH

**Housing and Cover:** Black, thermoplastic, 94V-0 rated.  
**Contacts:** Phosphor bronze, tin or duplex plated (see chart above).



\*Height of connector after termination is .253" (6.43 mm) ref.

## PADDLE BOARD CONNECTORS

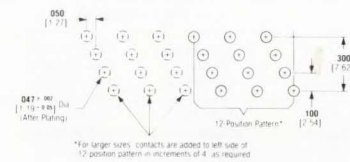


No. of Pos.	Dimension A In. (mm)	Paddle Board With Cover (.100" Post Length <sup>®</sup> )		
		"Full Row" Connector Kit	"Short End" Connector Kit	"Special Center" Connector Kit
10	.054 (1.43)	.....	88216-1	88219-1
12	.550 (13.97)	88213-1	.....	.....
14	.650 (16.51)	.....	88216-2	.....
16	.750 (19.05)	88213-2	.....	.....
18	.850 (21.59)	.....	88216-3	.....
20	.950 (24.13)	88213-3	.....	.....
24	1.150 (29.21)	88213-4	.....	.....
26	1.250 (31.75)	.....	88216-5	88219-2
30	1.450 (36.83)	.....	88216-6	.....
34	1.650 (41.91)	.....	88216-7	88219-3
36	1.750 (44.45)	88213-7	.....	.....
40	1.950 (49.53)	88213-8	.....	.....
50	2.450 (62.23)	.....	88216-1	88219-4
60	2.950 (74.93)	1-88213-3	.....	.....

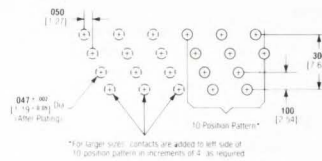
<sup>®</sup>Note: .156" post length also available.

## MATERIAL AND FINISH

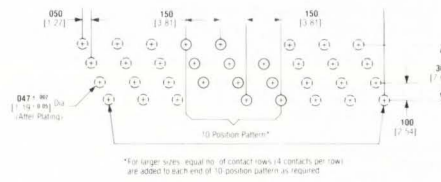
**Housing and Cover:** Black, thermoplastic, 94V-0 rated.  
**Contacts:** Phosphor bronze, plated, .000100-.000200" (0.00254-0.00508 mm) bright tin-lead over .000050" (0.00127 mm) nickel on entire contact.



RECOMMENDED "FULL ROW" MOUNTING HOLE PATTERN, COMPONENT SIDE (For .062" (1.57 mm) thick PC boards)



RECOMMENDED "SHORT END" MOUNTING HOLE PATTERN, COMPONENT SIDE (For .062" (1.57 mm) thick PC boards)



RECOMMENDED "SPECIAL CENTER" MOUNTING HOLE PATTERN, COMPONENT SIDE (For .062" (1.57 mm) thick PC boards)

For more information on AMP-LATCH connectors, consult the following AMP Literature: Catalog 404587-6 "AMP-LATCH IDC Connectors and Ribbon Cable", Catalog 73-177 "AMP-LATCH Ribbon Cable Connector System", AMP Standard Products Catalog, AMP Engineering Guide.





# AMP-LATCH Connectors

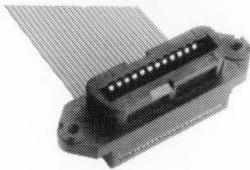
## CHAMP LATCH LOW PROFILE CONNECTORS Telephone Style



Bail Lock Plug Assembly



Screw Lock Plug Assembly



Screw Lock Receptacle Assembly



Panel Mount Receptacle Assembly

No. of Pos.	Part Numbers			
	Bail Lock Plug Assembly	Screw Lock Plug Assembly	Screw Lock Receptacle Assembly	Panel Mount Receptacle Assembly
24	554083-1	553598-1	553599-1	554088-1
36	554084-1	553600-1	553601-1	554089-1
50	554085-1	553602-1	553603-1	554090-1

## HARDWARE KITS CABLE-TO-CABLE

**Screw Lock Hardware:**  
Part No. 229911-1 (Two required per assembly).

**Bail Lock Hardware Kit:**  
Part No. 552561-3 (One kit required per assembly).

**CHAMP-LOK Hardware:**  
Part No. 552723-1 (36 and 50 positions).  
Part No. 552723-2 (24 positions).  
(One locking latch required per assembly).

## CABLE-TO-PANEL

**Screw Lock Hardware Kit:**  
Part No. 552568-2 (One kit required per assembly).  
Rear Panel Mount Application—.062" (1.57 mm) max. panel thickness.

**Metric Screw Lock Hardware Kit (For IEEE-488 Applications):**  
Part No. 553636-2 (for front panel mount).  
Part No. 553636-3 (for rear panel mount).  
(One kit required per assembly).

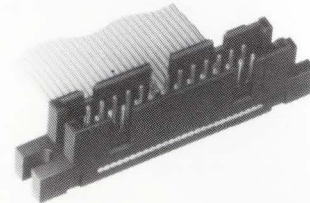
**Bail Lock Hardware Kit:**  
Part No. 552567-3  
(One kit required per assembly).

**CHAMP-LOK Hardware Kit (One kit required per assembly):**  
Part No. 553359-1 (for 36 and 50 positions).  
Part No. 553359-2 (for 24 positions).  
Part No. 552768-1 (without locking latch).

## PIN CONNECTORS WITH SLOTTED MOUNTING EARS

.100" × .100" (2.54 × 2.54 mm) Centers

Housing Assembly with Recessed Cover without Detent Windows



No. of Positions	Connector .000030' Gold Duplex Plated	No. of Positions	Connector .000030' Gold Duplex Plated
10	746353-1	34	746353-8
14	746353-2	40	746353-9
16	746353-3	50	1-746353-1
20	746353-4	60	1-746353-2
26	746353-6	64	1-746353-3
30	746353-7		

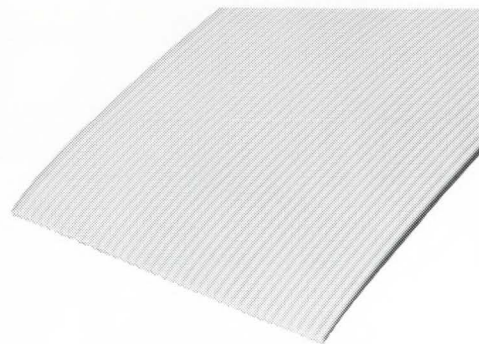
Note: Pin connectors also available without mounting ears.

### Material and Finish:

**Housing and Cover:** Black thermoplastic, 94V-0 rated.

**Contacts:** Phosphor bronze, duplex plated, .000030" (0.00076 mm) gold on cable termination end; .000100-.000200" (0.00254-0.00508 mm) bright tin-lead on pin end, with entire contact underplated with .000050" (0.00127 mm) nickel.

## RIBBON CABLE



### FEATURES:

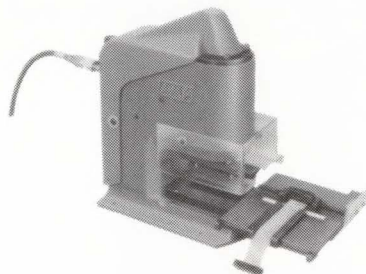
- Industry standard 28 AWG, 7/36 stranded, tinned copper, gray PVC, blue edge of conductor indicates No. 1.
- High density PVC insulation provides excellent resistance to abrasion, minimizes costly maintenance due to worn insulation.
- Consistent conductor spacing—virtually eliminates open/short circuits due to conductor misalignment. More reliable.
- Can be readily slit—makes cable breakout easy without distorting or exposing conductors. Saves material costs by using only the number of conductors needed.
- Continuous 300-foot reels also available.
- MIL-C-49055 also available.
- Recognized under the Component Program of Underwriters Laboratories Inc., File No. E53793, UL Style 2651.

No. of Conductors	Reel Part No. 100 ft. (30.48 m) Capacity* (Cond. No. 1 Marked)	No. of Conductors	Reel Part No. 100 ft. (30.48 m) Capacity* (Cond. No. 1 Marked)
9	2-499116-1	30	1-499116-2
10	499116-7	34	499116-8
14	499116-1	36	1-499116-6
15	2-499116-0	37	1-499116-9
16	499116-2	40	499116-5
18	1-499116-7	44	1-499116-0
20	499116-3	50	499116-6
24	1-499116-1	60	499116-9
25	1-499116-8	64	2-499116-3
26	499116-4	.....	.....

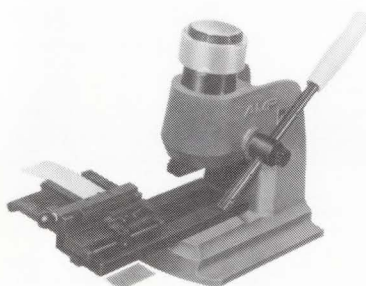
\*300 ft. reels also available.

For more information on AMP-LATCH Connectors, consult the following AMP Literature: Catalog 404587-6 "AMP-LATCH IDC Connectors and Ribbon Cable", Catalog 73-177 "AMP-LATCH Ribbon Cable Connector System", AMP Standard Products Catalog, AMP Engineering Guide.

### RECOMMENDED TOOLING



Pneumatic  
Auto Cycle Press  
(w/o Die Set)  
Part No. 91112-3



Manual  
Arbor Press  
(w/o Die Set)  
Part No. 91085-2

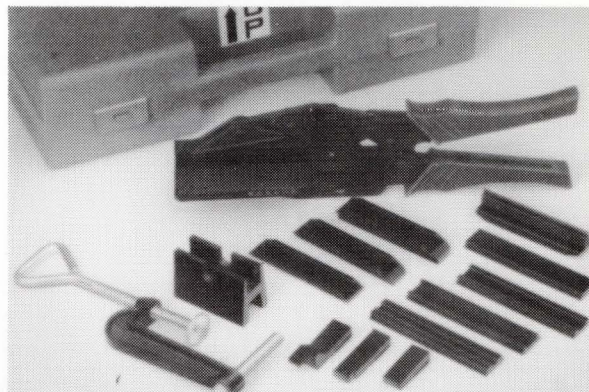
### DIE SETS

Connector Style	Die Set*	Locator Kit No.
Receptacle	91265-1	.....
Card Edge	91265-1	.....
D-Subminiature	91265-1	.....
50-Pos. D-Subminiature	91265-1	543241-1
DIP Plugs	91265-1	543205-1
Pin Connectors	91265-1	543206-1
CHAMP Latch	91265-1	543230-1
Paddle Board:		
Full Row, Short End	91115-1#	.....
Special Center	91115-2#	.....

\*Kit includes Locator Kit No. 543207-1.  
#Use With Arbor Press only.

The AMP-LATCH Ribbon Cable Connector System is complete when AMP tooling is utilized. The precision tooling featured here will allow you to make superior quality termination time after time. More sophisticated termination equipment is available for high volume production requirements. Contact your local AMP distributor for details.

### HAND TOOL KIT



#### Basic Kit—Part No. 91271-1

Includes locator kits for D-subminiature, receptacles and card edge, cable cutter kit, benchmark holder and carrying case.

### ADDITIONAL LOCATORS

Connectors	Locator Part No.
Pin Connectors	543259-1
DIP Plugs	543260-1
CHAMP Latch	543262-1

### FLAT RIBBON CABLE CUTTER

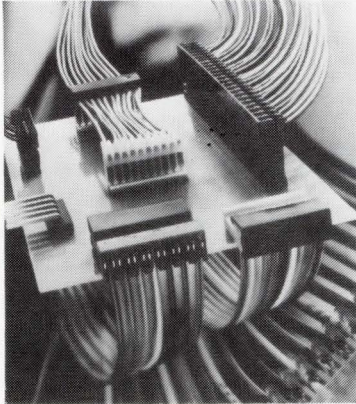


Tool Part No. 606717-1  
Replacement Parts:  
Blade—Part No. 606718-1  
Anvil—Part No. 606719-1

For more information on AMP-LATCH connectors, consult the following AMP Literature: Catalog 404547-6 "AMP-LATCH IDC Connectors", Catalog 73-177 "AMP-LATCH Ribbon Cable Connector System", AMP Standard Products Catalog, AMP Engineering Guide.



## AMP MTA MASS TERMINATION ASSEMBLIES



### FEATURES:

- Mass termination for low applied cost.
- Two complete systems—MTA-100 for .025" square posts on .100" centers; MTA-156 for .045" round or square posts on .156" centers.
- Variety of post headers available.
- Pre-loaded dual-beam insulation displacement contacts eliminate hand loading and the need for pre-stripped wires.
- Accommodates discrete, ribbon or jacketed cable.
- Discrete wire, ribbon cable and harness board tooling available.
- Contacts are post lubricated to prevent fretting corrosion.
- Capable of terminating wire with an outside diameter of .060" (MTA-100 housings); .095" (MTA-156 housings).
- Recognized under the Component Program of Underwriters Laboratories, Inc., File No. E28476.
- CSA certified under File No. LR 16455-54.
- Max. number of positions—MTA-100 = 28; MTA-156 = 24.

Centerline	Termination	Locking Ramp	Receptacle Connector Base Part Numbers				
			Green 28 AWG	Natural 24 AWG	Red 22 AWG	Yellow 20 AWG	Orange 18 AWG
0.100	Closed End	With	640443	640441	640440	.....	.....
0.100	Feed-Thru	With	640623	640621	640620	.....	.....
0.156	Closed End	With	.....	640429	640428	640427	640426
0.156	Closed End	Without	.....	640434	640433	640432	640431
0.156	Feed Thru	With	.....	640602	640601	640600	640559
0.156	Feed Thru	Without	.....	640607	640606	640605	640604

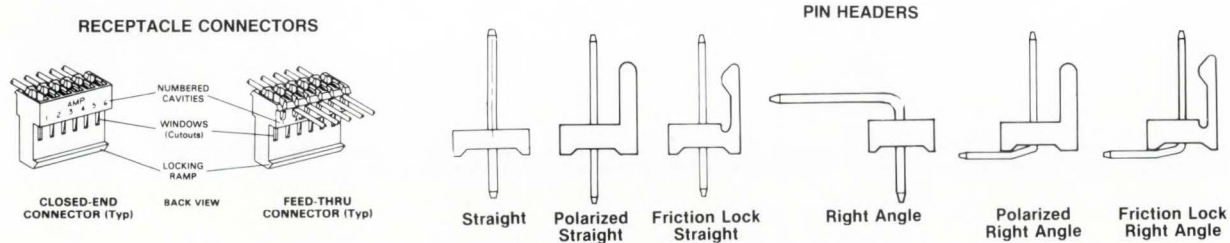
Note: All contacts are tin plated. For gold plated connector part numbers, consult your local AMP distributor.

Centerline	Post	Post/Tail Length	Pin Header Base Part Numbers					
			Straight	Polarized Straight	Friction Lock Straight	Right Angle	Polarized Right Angle	Friction Lock Right Angle
0.100	.025 square	.295/.140	640452	640454	640456	640453	640455	640457
0.156	.045 square	.450/.175	640383	640444	640445	640385	640387	640389
0.156	.045 round	.450/.175	640384	640386	640388	.....	.....	.....

Note: All contacts are tin plated. For gold plated connector part numbers, consult your local AMP distributor.

Centerline	Accessories Base Part Numbers				
	Closed-End Dust Cover	Feed-Thru Dust Cover	Closed-End Strain Relief	Feed-Thru Strain Relief	Keying Plug
0.100	640550	640642	643075*	643077*	641994-1#
0.156	640551	640643	643069§	643072§	641623-1#
0.156	.....	.....	643967†	643071†	642625-1

\*Max. Wire O.D.: .060". §Max. Wire O.D.: .065". †Max. Wire O.D.: .095". #10 keying plugs on carrier strip.



### ORDERING INFORMATION

\*When ordering, add prefix/suffix numbers to base part number to signify number of assembly circuits; see ordering code table below.

Example: 10 circuit MTA-100 Closed End Housing for 24 AWG wire—Part Number 1-640441-0.

### ORDERING CODE

No. of Circuits	Base No.		No. of Circuits	Base No.	
	Prefix	Suffix		Prefix	Suffix
2	.....	-2	9	.....	-9
3	.....	-3	10	1-	-0
4	.....	-4	11	1-	-1
5	.....	-5	12	1-	-2
6	.....	-6	13	1-	-3
7	.....	-7	14	1-	-4
8	.....	-8	15	1-	-5

No. of Circuits	Base No.		No. of Circuits	Base No.	
	Prefix	Suffix		Prefix	Suffix
16	1-	-6	23	2-	-3
17	1-	-7	24	2-	-4
18	1-	-8	25	2-	-5
19	1-	-9	26	2-	-6
20	2-	-0	27	2-	-7
21	2-	-1	28	2-	-8
22	2-	-2			

Note: Additional options, including tab-polarized connectors and headers, feed-thru connectors, plus gold-plated receptacles and posts, are available.

For more information on AMP MTA Connectors, consult the following AMP literature: Catalog 77-145 "AMP MTA Mass Termination Assembly Printed Circuit Board Connectors", AMP Standard Products Catalog, AMP Engineering Guide.



## HAND TOOLS WITH MODULAR HEADS (ORDER TOOL AND APPLICABLE TERMINATION HEAD SEPARATELY)

### DISCRETE WIRE TOOL



### PISTOL GRIP HAND TOOL



Part No. 58074-1

### MODULAR TERMINATION HEADS

Connector	Part No.
MTA-100 Receptacles Closed End	58246-1
MTA-156 Receptacles Closed End	58247-1

### BENCH MOUNT ASSEMBLY (FOR AIR POWERED TOOL)



Part No. 58076-1  
Adapts air tool to bench mount. Includes swivel mount and foot pedal.

### AIR POWERED HAND TOOL



Part No. 58075-1

### MAINTENANCE HAND TOOL

MTA-100  
P/N 59803-1  
MTA-156  
P/N 59804-1



## MASS TERMINATION ARBOR PRESS AND APPLICATORS (FOR RIBBON CABLE AND DISCRETE WIRE)

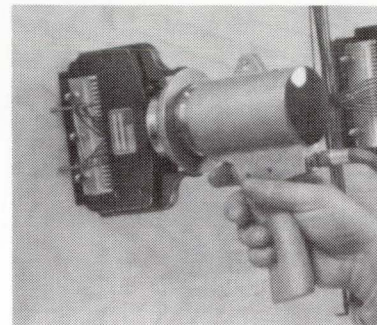
Connector	Max. O.D. (In.)	Applicator For Arbor Tool No. 58024-1	Lower Comb Assemblies		Ribbon Cable Notching Tool
			Closed End	Feed Thru	
MTA-100	.050	58039-1	58242-1	58243-1	59834-1
MTA-156	.070	58040-1	58244-1	58245-1	59835-1



### HARNESS BOARD TOOLING

Connector	Max. O.D. (In.)	Applicator	Comb Assemblies	
			Closed End	Feed Thru
MTA-100	.050	59842-1	58242-1	58243-1
MTA-156	.070	59843-1	58244-1	58245-1

**Note:** Complete tooling assembly requires Power Unit 59809-1, applicator and appropriate comb assemblies.

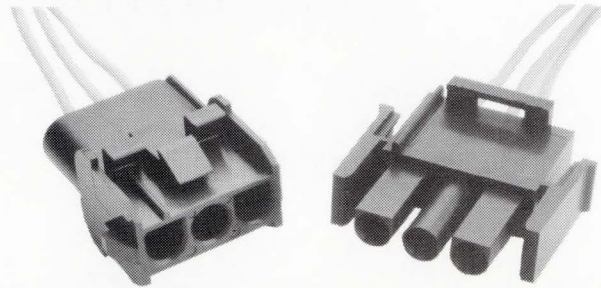


For more information on AMP MTA Connectors, consult the following AMP Literature: Catalog 77-145 "AMP MTA Mass Termination Assembly Printed Circuit Board Connectors", AMP Standard Products Catalog, AMP Engineering Guide.

## UNIVERSAL MATE-N-LOK CONNECTORS

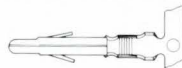
### FEATURES

- Rated to 600 volts.
- Pins and sockets can be intermixed in the same housing.
- Positive polarization.
- Pin or socket contact can be hot.
- Positive locking housings.
- Insulation capability to .200" (5.08 mm) diameter.
- Removable, crimp snap-in contacts.
- Low contact mating force.
- Dual locking lances provide optimum contact stability.
- Panel-mount or free-hanging.
- Harness to PC board capability using pin or socket header assemblies.
- Contacts are on .250" (6.35 mm) centerline spacing.



Wire Size Range (AWG)	Insulation Diameter Range (In.)	Material and Finish	Contact Number				Hand Tool Part No.
			Strip Form		Loose Piece		
			Pin	Socket	Pin	Socket	
24-18	.040-.100	Brass, pre-tin	350699-1	350570-1* 350851-1	350706-1	350689-1*	603544-1
		Brass, gold	350699-2	350570-2* 350851-2	350706-2	350689-2* 640347-2	
		Brass, selective gold	350699-7	350570-7* 350851-7	350706-7	350689-7*	
20-14	.060-.130	Brass, pre-tin	350687-1	350536-1	350705-1	350550-1	603545-1 or 90296-1
		Brass, gold	350687-2	350536-2	350705-2	350550-2	
		Brass, selective gold	350687-7	350536-7	350705-7	350550-7	
20-14	.130-.200	Brass, pre-tin	350700-1	350537-1	350707-1	350551-1	90298-1†
		Brass, gold	350700-2	350537-2	350707-2	350551-2	90299-1†
		Brass, selective gold	350700-7	350537-7	350707-7	350551-7	
12-10	.200 max.	Ph. Bronze, pre-tin	.....	350923-3	.....	640310-3	69710-1§
<b>GROUNDING PIN (.100" LONGER)</b>							
20-14	.060-.130	Brass, pre-tin	350654-1	.....	350669-1	.....	90296-1

\*Socket contact—.010" (0.25 mm) stock thickness. †Hand Tool No. 90298-1 for wire size 20-18 AWG; Hand Tool No. 90299-1 for wire size 16-14 AWG. §Hand Tool No. 69710-1 use Die Set No. 90367-1. Contact Insertion Tool Part No. 455830-1. Contact Extraction Tool Part No. 458994-1.



Pin



Socket

### CONNECTOR HOUSINGS

Material: UL rated 94V-2, natural nylon.

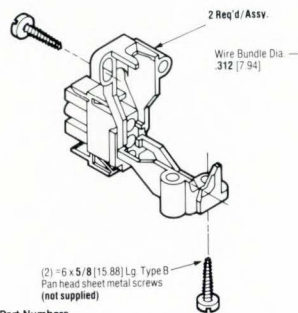
No. of Circuits	Housing Part Numbers	
	Plug	Cap
1	1-350867-0	1-350868-0
2	1-480698-0*	1-480699-0*
3	1-480700-0*	1-480701-0*
4	1-480702-0*	1-480703-0*
5	1-480763-0*	1-480764-0*
6	640585-1*	.....
6	1-480704-0	1-480705-0

No. of Circuits	Housing Part Numbers	
	Plug	Cap
8	640586-1*	.....
9	1-480706-0	1-480707-0
12	1-480708-0	1-480709-0
15	1-480710-0	1-480711-0

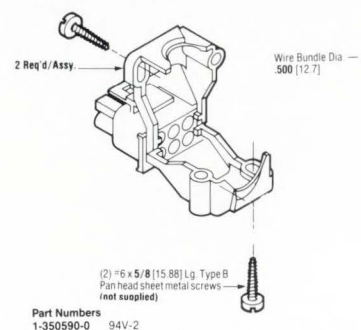
\*In line version.

### STRAIN RELIEFS

2, 3, 4 and 5 Circuit



6, 9, 12 and 15 Circuit



For more information on AMP Universal MATE-N-LOK Connectors, consult the following AMP Literature: Catalog 73-104 "Universal MATE-N-LOK Pin and Socket Connectors"; AMP Standard Products Catalog; AMP Engineering Guide.





# Universal MATE-N-LOK Connectors

## PRINTED CIRCUIT BOARD PIN HEADER ASSEMBLIES

**Housing Material:** 94V-2 rating, natural color (NEMA colors available).

**Contact Material:** Phosphor bronze, pre-tin plated or .000030" (0.0008 mm) min. gold over .000050" (0.0013 mm) min. nickel.

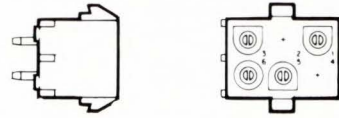
### 2, 3, 4, 5, 6 & 8 IN-LINE CIRCUITS



No. of Circuits	Standard Tail <sup>®</sup>	Pin Finish	Mates with Plug Housing Part Number (Using Socket Contacts)
2	350428-1	Pre-tin	1-480698-0
	350428-2	Gold	
3	350429-1	Pre-tin	1-480700-0
	350429-2	Gold	
4	350430-1	Pre-tin	1-480702-0
	350430-2	Gold	
5	640466-1	Pre-tin	1-480763-1
6	641832-1	Pre-tin	640585-1
8	641825-1	Pre-tin	640586-1

\*Use standard tail for .062" (1.57 mm) thick PC board.

### 6, 9, 12 & 15 MULTIPLE ROW CIRCUITS

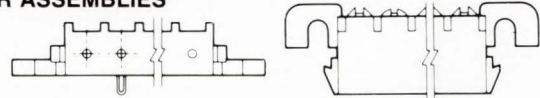


No. of Circuits	Standard Tail <sup>®</sup>	Pin Finish	Mates with Plug Housing Part Number (Using Socket Contacts)
6	350431-1	Pre-tin	1-480704-0
	350431-2	Gold	
9	350432-1	Pre-tin	1-480706-0
	350432-2	Gold	
12	350433-1	Pre-tin	1-480708-0
	350433-2	Gold	
15	350434-1	Pre-tin	1-480710-0
	350434-2	Gold	

\*Use standard tail for .062" (1.57 mm) thick PC board.

## RIGHT ANGLE PIN HEADER ASSEMBLIES

**Contact Material:** Phosphor bronze.  
**Housing Material:** 94V-2 rated, natural nylon.

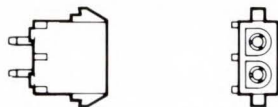


No. of Circuits	Pin Number	Contact Finish	Mates with Plug Housing Part Number (Using Socket Contacts)
2	1-350946-0	Pre-tin	1-480698-0
	2-350946-0	Gold	
3	1-350947-0	Pre-tin	1-480700-0
	2-350947-0	Gold	
4	1-350948-0	Pre-tin	1-480702-0
	2-350948-0	Gold	

No. of Circuits	Pin Number	Contact Finish	Mates with Plug Housing Part Number (Using Socket Contacts)
5	1-350949-0	Pre-tin	1-480763-0
	2-350949-0	Gold	
6	640587-1	Pre-tin	640585-1
	640587-2	Gold	
8	640588-1	Pre-tin	640586-1
	640588-2	Gold	

## PRINTED CIRCUIT BOARD SOCKET HEADER ASSEMBLIES

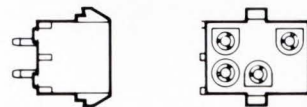
### 2, 3, 4 & 5 CIRCUITS



No. of Circuits	Standard Tail <sup>®</sup>	Socket Finish	Mates with Plug Housing Part Number (Using Pin Contacts)
2	350759-4	Pre-tin	1-480698-0
	350759-3	Gold	
3	350760-4	Pre-tin	1-480700-0
	350760-3	Gold	
4	350761-4	Pre-tin	1-480702-0
	350761-3	Gold	
5	640467-1	Pre-tin	1-480763-0

\*Use standard tail for .062" (1.57 mm) thick PC boards.

### 6, 9, 12, & 15 CIRCUITS



No. of Circuits	Standard Tail <sup>®</sup>	Socket Finish	Mates with Plug Housing Part Number (Using Pin Contacts)
6	350762-4	Pre-tin	1-480704-0
	350762-3	Gold	
9	350763-4	Pre-tin	1-480706-0
	350763-3	Gold	
12	350764-4	Pre-tin	1-480708-0
	350764-3	Gold	
15	350765-4	Pre-tin	1-480710-0
	350765-3	Gold	

\*Use standard tail for .062" (1.57 mm) PC boards.

For more information on AMP Universal MATE-N-LOK Connectors, consult the following AMP Literature: Catalog 73-104 "Universal MATE-N-LOK Pin and Socket Connectors; AMP Standard Products Catalog; AMP Engineering Guide.





# Commercial MATE-N-LOK Connectors

## COMMERCIAL MATE-N-LOK PIN & SOCKET CONNECTORS

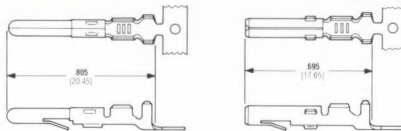
### CONNECTOR HOUSING FEATURES:

- Fully polarized nylon housings
- Easy cavity identification
- Locking devices are integral part of design. Connector halves will hold together under severe conditions of vibration and shock
- Built-in contact stabilization and self-aligning features
- Hot side egg-crate design for safety
- Precision molded to exacting tolerances
- Keying plug available—Part No. 200821-1

### CONTACT FEATURES

- "Clean" design—no sharp projections to impede insertion or damage housings
- Carries up to 15 amps maximum (based on 30° C temperature rise)
- Low insertion/extraction forces
- UL recognized for 250 volts, AC or DC
- Recognized under the Component Program of Underwriters Laboratories Inc., File No. E28476
- CSA certified under File No. LR-16455-38

### COMMERCIAL MATE-N-LOK CONTACTS



Pin

Socket

Wire Size AWG	Insul. Dia.* (Max.)	Material and Finish	Part Numbers		
			Pin	Socket	Hand Tool
24-18	.100 (2.54)	Brass, tin plated Ph Bronze, tin plated Brass, gold plated†	60618-1	60617-1	90123-2
			60618-4	60617-4	
			60618-5	60617-5	
20-14	.130 (3.3)	Brass, tin plated Ph Bronze, tin plated Brass, gold plated†	60620-1	60619-1	90124-2
			60620-4	60619-4	
			60620-5	60619-5	

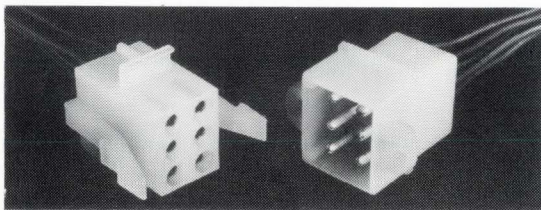
\*Diameter in inches (mm).

†.000030" (0.00076 mm) gold in mating area and inside wire barrel; remainder of contact is nickel plated.

Note: Extraction Tools—Part No. 465644-1 (both pins and sockets).

Insertion Tool—Part No. 91002-1.

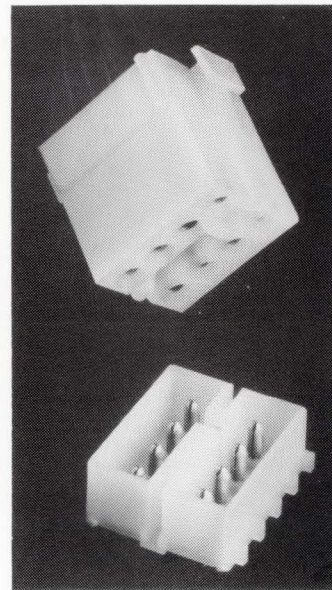
### PANEL MOUNT CONNECTORS



No mounting hardware required. Connectors simply snap and lock in their mounting hole. Accommodate .025" (0.64 mm) to 0.65" (1.65 mm) panel thickness. Full polarization for error free assembly.

No. of Circuits	Part Numbers	
	Pin Housing	Socket Housing
3	1-480305-0	1-480304-0
4	1-480426-0	1-480425-0
6	1-480276-0	1-480273-0
9	1-480277-0	1-480274-0
12	1-480278-0	1-480275-0
15	1-480324-0	1-480323-0

### FREE-HANGING CONNECTORS

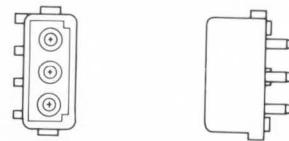


No. of Circuits	Part Numbers	
	Pin Housing	Socket Housing
1	1-480350-0*	1-480349-0
1	1-480351-0#	1-480349-0
2	1-480319-0	1-480318-0
3	1-480305-0	1-480303-0
4	1-480426-0	1-480424-0
6	1-480340-0	1-480270-0
8	1-480345-0	1-480283-0
10	1-480339-0	1-480285-0

\*Detent lock. #Positive lock.

### PRINTED CIRCUIT BOARD PIN HEADER ASSEMBLIES (MATE WITH FREE-HANGING SOCKET CONNECTORS)

Detent Lock



Detent Lock

No. of Circuits	Contact Plating	Part No.
2	Tin	350209-1
	Gold	350209-2
3	Tin	350210-1
	Gold	350210-2
4	Tin	350211-1
	Gold	350211-2
6	Tin	1-380999-0
	Gold	2-380999-0
8	Tin	350212-1
	Gold	350212-2
10	Tin	1-380991-0
	Gold	2-380991-0

Housing Material: Natural nylon.

Pin Material: Copper alloy.

Lock Type: Detent; positive lock available.

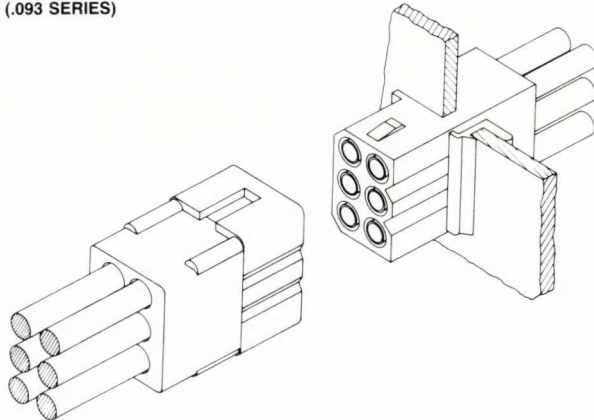
Note: Use standard pin for .062" (1.57 mm) thick PC board. Long pin available.



# AMP Commercial Pin & Socket Connectors

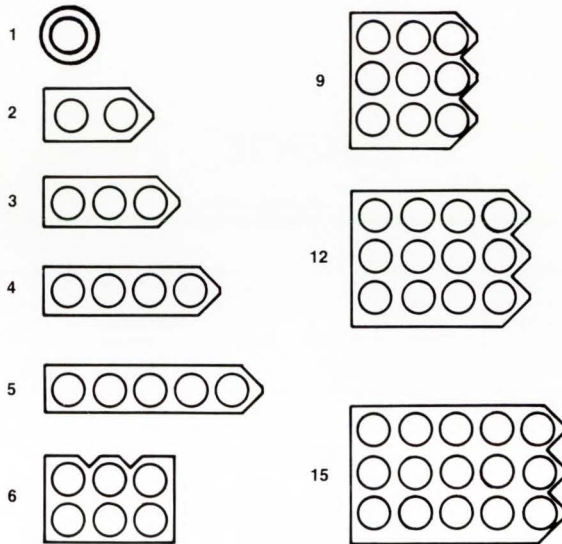
## AMP COMMERCIAL PIN AND SOCKET CONNECTORS

(.093 SERIES)



- Plug and receptacle housings molded of 94V-2 nylon.
- Receptacle housings are available with or without mounting ears and/or detent locks.
- Plug housings are available with or without mounting ears.
- Contacts are available in tin-plated and .000030" or .000050" selective gold-plated brass or phosphor bronze.
- Contacts accept wire ranges of 24 thru 18 AWG with .110" max. insulation diameter.
- Totally intermateable/interchangeable at all levels (housing for housing; contact for contact; assembly for assembly) with industry standard connectors of the same type (.198" grid).
- Recognized under the Component Program of Underwriters Laboratories, Inc.—File No. E28476; CSA Certified under File No. LR-16455-101.

### HOUSING CONFIGURATIONS



### RECEPTACLE HOUSINGS

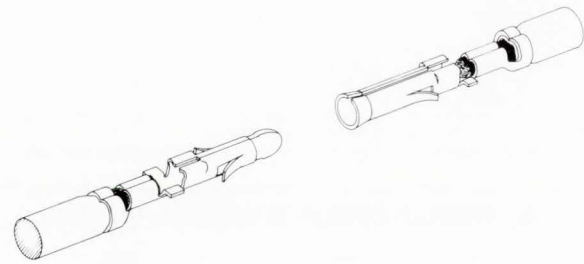
Circuit Positions	Part Number	Circuit Positions	Part Number	Circuit Positions	Part Number
<b>WITH MOUNTING EARS AND DETENT LOCKS</b>					
2	770066-1	4	770076-1	9	770093-1
3	770071-1	6	770087-1	12	770099-1
<b>WITHOUT MOUNTING EARS AND DETENT LOCKS</b>					
2	770067-1	6	770088-1	12	770100-1
3	770072-1	9	770094-1	15	770105-1
<b>WITH DETENT LOCKS ONLY</b>					
1	770063-1	4	770075-1	9	770092-1
2	770065-1	5	770083-1	12	770098-1
3	770070-1	6	770086-1		
<b>WITH MOUNTING EARS ONLY</b>					
6	770085-1	12	770097-1	15	770103-1
9	770091-1				

### PLUG HOUSINGS

<b>WITH MOUNTING EARS</b>					
2	770068-1	6	770089-1	12	770101-1
3	770073-1	9	770108-1	15#	770106-1
4	770077-1	9*	770095-1		
<b>WITHOUT MOUNTING EARS</b>					
1	770064-1	4	770078-1	9	770096-1
2	770069-1	5	770084-1	12	770102-1
3	770074-1	6	770090-1	15§	770107-1

\*Mounting ears at extreme wire entry end. #With mounting ears and without locking window. §Without mounting ears or locking window.

### COMMERCIAL .093" PIN AND SOCKET CONTACTS



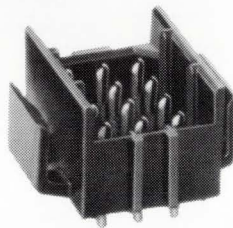
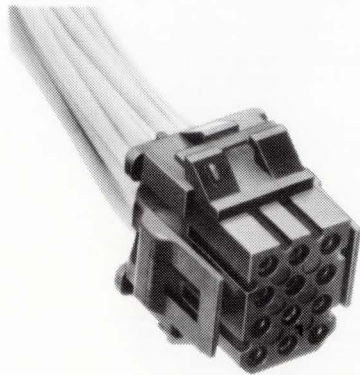
Wire Size	Insul. Dia. (Max.)	Plating/Material	Loose Piece		Hand Tool
			Pin	Socket	
20-14	.140"	SN BR	770145-1	770144-1	603545-1
20-14	.140"	AU BR*	770145-5	770144-5	
20-14	.140"	AU PHOSBRZ*	770145-7	770144-7	
20-14	.140"	SN PHOSBRZ	.....	770144-6	
24-18	.110"	SN BR	770147-1	770146-1	603544-1
24-18	.110"	AU BR*	770147-5	770146-5	
24-18	.110"	AU PHOSBRZ*	770147-7	770146-7	
24-18	.110"	AU BR**	.....	770146-3	

\*.000030" gold in contact area; remainder of contact nickel plated.  
 \*\*.000050" gold in contact area; gold flash on remainder of contact.

For more information on this product, consult the following AMP Literature: DP 5560-23 "Commercial Pin and Socket Connectors".

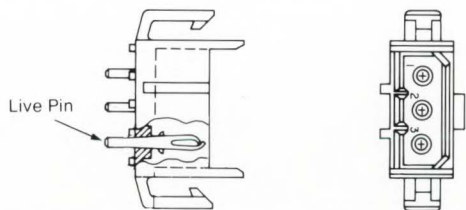


## MR MINIATURE RECTANGULAR CONNECTORS



- High density achieved through .165" contact center.
- Contacts accept 26-18 AWG wire and insulation diameters of .025" to .110".
- Housings positively lock to prevent accidental disengagement.
- Either cap or plug housing can be mounted in same rectangular panel cutout without additional hardware.
- Plug and cap design includes molded-in polarizing feature to assure proper mating.
- Numbered cavities for easy circuit identification.
- Egg crate design of plug half fully encloses socket contacts, reducing shock hazard.
- Molded skirt extension on cap protects pin contacts.
- Strain relief for 6 thru 36 positions is one-piece, molded, "clam-shell" design, and can be provided with grommets to accommodate various wire bundle sizes and insulation diameters.
- Contacts carry up to 10 amperes (based on 105° operating temperature).
- PC board pin headers permit cable connections.
- Pin header standoffs on housings at board interface facilitates gas venting.

## MR PRINTED CIRCUIT BOARD PIN HEADERS



- Tin plated contacts (gold available).
- .120" tail length for .062" thick PC board (.150" and .180" thicknesses also available).
- Standard black housing; 94V-2 rated nylon.

No. of Contacts	Header Part No.	Mates with Socket Housing Part No.
2	9-350359-1	350354
3	9-350362-1	350335
4	9-350255-1	350240
6	9-350258-1	350241
9	9-350261-1	350242
12	9-350364-1	350243
15	9-350267-1	350244
20	9-350370-1	350245
24	9-350273-1	350246
36	9-350276-1	350356

## CONNECTOR HOUSINGS

Housing: 94V-2 rated nylon.

No. of Contacts	Part Numbers	
	Pin Housing	Socket Housing
2	1-350351-9	1-350354-9
3	1-350352-9	1-350355-9
4	1-350233-9	1-350240-9
6	1-350234-9	1-350241-9
9	1-350235-9	1-350242-9
12	1-350236-9	1-350243-9
15	1-350237-9	1-350244-9
20	1-350238-9	1-350245-9
24	1-350239-9	1-350246-9
36	1-350353-9	1-350356-9

Note: Contacts must be ordered separately.

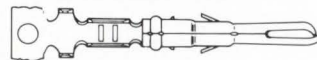
## STRAIN RELIEF

ONE-PIECE CLAM SHELL	
No. of Circuits	Part Number
6	1-350373-9
9	1-350522-9
12	1-350374-9
15	1-350523-9
20	1-480634-9
24	1-350524-9
36	1-480594-9

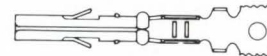
## ADAPTING GROMMET FOR STRAIN RELIEF

No. of Circuits	I.D. In. (mm)	Part Number
6	.156 (3.96)	1-350377-0
	.218 (5.54)	1-350376-0
	.296 (7.52)	1-350375-0
9, 12, 15	.218 (5.54)	1-350378-1
	.250 (6.35)	1-350379-1
	.281 (7.14)	1-350380-1
20, 24, 36	.437 (11.10)	1-380935-0
	.375 (9.53)	1-380936-0
	.312 (7.92)	1-380937-0

## MR CONTACTS



Live Split Pin

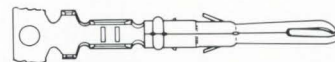


Standard Socket (Preferred\*)

Wire Size Range (AWG)	Insulation Range	Finish	Loose Piece Part No.		Hand Tool Part No.
			Live Split Pin	Standard Socket	
26-18	.050-.115"	Pre-tin	640545-1	641300-1	90325-1

Material: Phosphor bronze.

## GROUNDING PIN



Wire Size Range (AWG)	Insulation Range	Finish	Loose Piece Part No.	Hand Tool Part No.
26-18	.050-.115"	Pre-tin	640580-1	90325-1

Contact Insertion Tool (Optional) Part Number 455830-1  
Contact Extraction Tool Part Number 455822-2.

## KEYING PLUG

Part No. 350591-1.



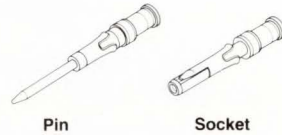




# Multimate Contacts

## TYPE II CONTACTS SCREW MACHINED

For use with M Series, Metrimate and CPC/CMC Series 1 and 4. Contacts are 30 mil gold plated.



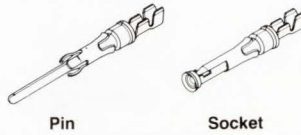
Wire Size (AWG)	Insul. Dia. (In.)	Color Code	Part Numbers		
			Loose Piece*		Hand Tool
			Pin	Socket	
24-18	.040-.062	Yellow/Red	201587-1	201580-1	90281-2
	.055-.085	Yellow/Red	201330-1	201328-1	or 45099
18-16	.080-.105	.....	202507-1	202508-1	90136-1
	No Insul. Support	Blue/Blue	200336-1	200333-1	45098
		Blue/Blue	207983-1#	207986-1#	
Keying Plug			200821-1		

#Grounding plug and socket; must be used in pairs for make-first, break-last condition.

Part No. 200982-2—Insertion Tool for Type II Contacts.  
Part No. 305183-R—Extraction Tool for Type II Contacts.

## TYPE III+ CONTACTS PRECISION FORMED

For use with M Series, Metrimate and CPC/CMC Series 1 and 4.



Wire Size (AWG)	Insul. Dia. (In.)	Contact Finish	Part Numbers		
			Loose Piece*		Hand Tool
			Pin	Socket	
24-20	.040-.080	Tin	66103-2	66105-2	90277-1
		Gold†	66103-4	66105-4	
	.080-.100	Tin	66400-2	66399-2	90310-2
		Gold†	66400-4	66399-4	
18-14	.110-.150	Tin	66602-1	66601-1	90310-2
		Gold†	66602-2	66601-2	
14	.080-.100	Tin	66361-2	66360-2	90281-1
		Gold†	66361-4	66360-4	
Keying Plug			200821-1		

†30 mil selective gold plated.

Part No. 200983-2—Insertion Tool for Type III+ Contacts (for insulation diameter of .070" or less).

Part No. 305183-R—Extraction Tool for Type III+ Contacts.

## SIZE 20 DF CONTACTS PRECISION FORMED

For use with CPC/CMC Series 2. Contacts are 30 mil selective gold plated.

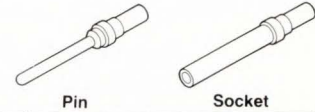


Wire Size (AWG)	Insul. Dia. (In.)	Part Numbers		
		Loose Piece*		Hand Tool
		Pin	Socket	
28-24	.040	66507-9	66509-9	90312-1
	.060	66682-4	66683-4	or
24-20	.060	66506-9	66504-9	603547-1
Keying Plug			206509-1	

Part No. 91067-2—Insertion/Extraction Tool.

## SIZE 20 DM CONTACTS SCREW MACHINED

For use with CPC/CMC Series 2. Contacts are 30 mil selective gold plated.

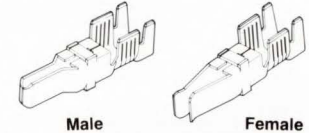


Wire Size (AWG)	Insul. Dia. (In.)	Part Numbers		
		Loose Piece*		Hand Tool
		Pin	Socket	
24-20	.068	205098-1	205090-1	.....
Keying Plug		206509-1		

Part No. 91067-2 Insertion/Extraction Tool.

## TYPE XII CONTACTS

For use with CPC/CMC Series 3 and 4. Contacts are 30 mil selective gold plated.

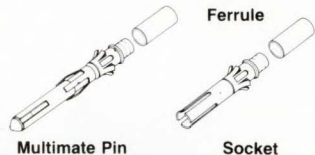


Wire Size (AWG)	Insul. Dia. (In.)	Contact Plating	Part Numbers		
			Loose Piece*		Hand Tool
			Male	Female	
16, 14 and 12	.135-.160	Gold	66261-2	66258-2	90382-2
		Silver	66261-4	66258-4	
10-8	.190-.220	Gold	66259-2	66257-2	90384-1
		Silver	66259-4	66257-4	
Keying Plug			206508-1		

Part No. 91019-3—Extraction Tool for Type XII Contacts.

## RF CONTACTS SUBMINIATURE COAXICON

For use with M Series, Metrimate and CPC/CMC Series 1 and 4. Contacts are 30 mil gold plated.

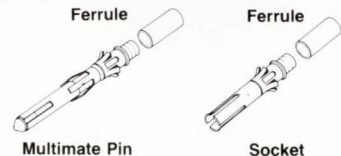


Coaxial Cable Size (RG/U)	Part Numbers			
	Multimate Pin	Socket	Ferrule	Hand Tool
178, 176	226537-2	51565-2	1-332057-0	69656-2
196 (Dbl. Braid)	226537-2	51565-2	225088-1	69656-9
174, 188, 316	226537-1	51565-1	1-332056-0	69656
174 (Dbl. Braid)	226537-1	51565-1	225088-3	69656-7
179, 187	226537-1	51565-1	1-332056-0	69656-1
187 (Dbl. Braid)	226537-1	51565-1	225088-1	69656-8
161 (Dbl. Braid)	226537-1	51565-1	1-332056-0	69656-5

Part No. 305183—Extraction Tool for RF Contacts.

## RF CONTACTS TWISTED PAIRS (TP) & SHIELDED WIRE

Contacts are 30 mil gold plated.



Wire Size (AWG)	Part Numbers			
	Multimate Pin	Socket	Ferrule	Hand Tool
30 (TP, Solid)	226537-3	51565-3	1-332057-0	69656-2
28 (TP, Solid)	226537-3	51565-3	1-332057-0	69656
28 (TP, 7-Strand)	226537-3	51565-3	1-332057-0	69656-1, 69656-2
26 (TP, 7-Strand)	226537-3	51565-3	1-332057-0	69656
26 (Shielded, .075", ax. O.D.)	226537-1	51565-1	1-332057-0	69656-3

Part No. 305183—Extraction Tool for RF Contacts.

For more information on Multimate Contacts, consult the following AMP Literature: Catalog 73-127 "M Series Pin and Socket Connectors"; Catalog 73-204 "CPC and Metal Shell CPC Connectors"; AMP Standard Products Catalog; AMP Engineering Guide.

## CIRCULAR PLASTIC\* AND METAL SHELL† CONNECTORS

### FEATURES:

- Lightweight, all-plastic connectors and metal-shell versions available.
- CPC connectors made of UL recognized, high-grade thermoplastic material.
- Four connector series for different connection needs:
  - Series 1—Standard density applications with Multimatch contacts.
  - Series 2—High-density applications with size 20 DM and 20 DF contacts, .040" (1.02 mm) dia.
  - Series 3—Power density applications with type XII contacts are capable of carrying up to 35 amperes of current.
  - Series 4—Combination of standard and power density applications with Series 1 and Series 3 contacts.
- Available in panel-mount, chassis-mount and free-hanging versions.
- Quick-connect/disconnect capability with thread assist, positive detent coupling.
- Built-in pin and socket protection.
- Plug or socket half can be "hot", depending on connector sex.
- 5-key polarization for proper mating of connector halves.
- Special connector configurations offer mixed coaxial cable sizes, special solder and posted contacts, special mounting designs, built-in strain relief and adaptability to snap-on cable boots.
- Full complement of optional accessories.

### CONNECTOR MATING CONFIGURATIONS



STANDARD SEX

REVERSE SEX

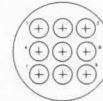
### Explanation of Contact Arrangement Codes:

Example: Arrangement No. 23-24—23 = shell diameter in increments of 1/16", i.e., 23/16; 24 = number of contacts, i.e., 24.

### Series 1 Contact Arrangement Shell Size 11 and 13

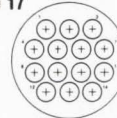


Arrangement 11-4\*

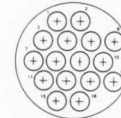


Arrangement 13-9\*

### Shell Size 17

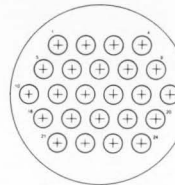


Arrangement 17-14\*  
22-14†

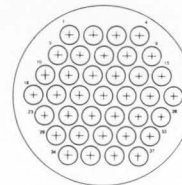


Arrangement 17-16\*  
22-16†

### Shell Size 23



Arrangement 23-24\*  
28-24†



Arrangement 23-37\*  
28-37†

### Series 2 Contact Arrangement

#### Shell Size 11

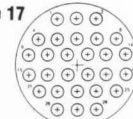


Arrangement 11-8\*



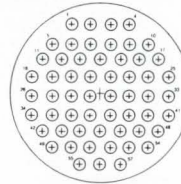
Arrangement 11-9\*

#### Shell Size 17

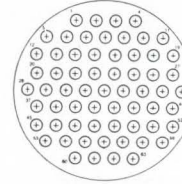


Arrangement 17-28\*  
22-28†

#### Shell Size 23



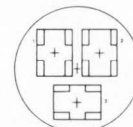
Arrangement 23-57\*  
28-57†



Arrangement 23-63\*  
28-63†

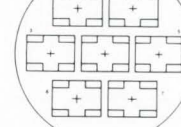
### Series 3 Contact Arrangements

#### Shell Size 17



Arrangement 17-3\*  
22-3†

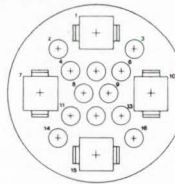
#### Shell Size 23



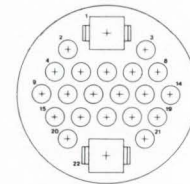
Arrangement 23-7\*  
28-7†

### Series 4 Contact Arrangements

#### Shell Size 23



Arrangement 23-16M\*  
28-16M†



Arrangement 23-22M\*  
28-22M†





# Circular Plastic Connectors

## CIRCULAR PLASTIC CONNECTORS

**Material:** UL recognized, 94V-1 rated, heat-stabilized, fire-resistant, self-extinguishing, black thermoplastic.

**Connector Series:**

**Series 1:** Size 16 (Signal, subminiature coaxial and fiber optic).

**Series 2:** Size 20 (Signal).

**Series 3:** Power.

**Series 4:** Mix of Size 16 and power.



## CIRCULAR METAL SHELL CONNECTORS

**Material and Finish:**

**Receptacle:**

**Insert:** Black thermoplastic.

**Outer Shell:** Aluminum alloy, zinc plated or unplated.

**Plug:**

**Insert:** Black thermoplastic.

**Outer Shell and Coupling Ring:** Aluminum alloy, zinc plated.

**Retainer Ring:** Stainless steel.

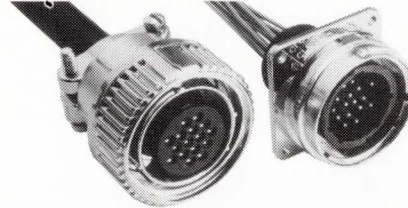
**Connector Series:**

**Series 1:** Size 16 (Signal, subminiature coaxial and fiber optic).

**Series 2:** Size 20 (Signal).

**Series 3:** Power.

**Series 4:** Mix of Size 16 and power.

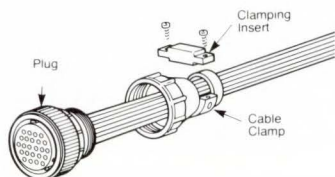


Series (Class)	Arrangement No.	Sex*	Part Numbers		
			Receptacles		Plugs
			Sq. Flanged	Free Hanging	
1 (A)	11-4	Rev. Std.	206430-1 206061-1	206430-2 206153-1	206429-1 206060-1
	13-9	Std.	206705-1	206705-2	206708-1
	17-14	Rev.	206043-1	206043-3	206044-1
	17-16	Std.	206036-1	206036-3	206037-1
	23-24	Std.	206838-1	206838-2	206837-1
	23-37	Rev. Std.	206306-1 206151-1	206306-2 206151-2	206305-1 206150-1
2 (A)	11-8	Std. Rev.	205841-1 206433-1	205841-2 206433-2	205838-1 206434-1
	11-9	Std.	206486-1	206486-2	206485-1
	17-28	Std. Rev.	205840-1 206038-1	206152-1 206038-2	205839-3 206039-1
	23-57	Rev.	206438-1	206438-2	206437-1
3 (A)	17-3	Std. Rev.	206036-1 206425-1	206207-1 206415-2	206037-1 206426-1
	23-7	Std. Rev.	206137-1 206227-1	206137-2 206227-2	206136-1 206226-1
4 (A)	23-16M	Std.	207486-1	207486-2	207485-1
	23-22M	Std.	206613-1	206613-2	206612-1

**Note:** Contacts must be ordered separately. See Multimate Contacts page. \*Standard Sex: Pin contacts in receptacle housings; socket contacts in plug housings. Reverse Sex: Socket contacts in receptacle housings; pin contacts in plug housings.

## CABLE CLAMPS

Cable clamps are used to prevent excessive strain on cable or wire from being transmitted to the contacts inside the connector housings.



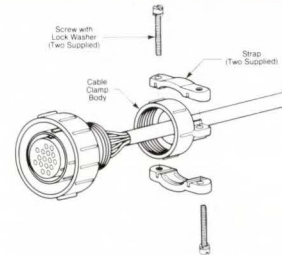
Shell Size	Standard		Large	
	Cable O.D. (Max.)	Part No.	Cable O.D. (Max.)	Part No.
11	.329 (8.33)	206062-1	.453 (11.51)	206358-1
13	.453 (11.51)	206966-1	.703 (17.86)	207008-1
17	.453 (11.51)	206070-1	.703 (17.86)	206322-1
23	.703 (17.86)	206138-1	1.125 (28.58)	206512-1

Series (Class)	Arrangement No.	Sex*	Part Numbers	
			Sq. Flange Receptacle	Plug
1 (A)	14-5	Std. Rev.	208719-1 208721-1	208718-1 208720-1
	14-7	Std. Rev.	208715-1 208717-1	208714-1 208716-1
	22-14	Rev.	208487-1	208486-1
	22-16	Std.	208489-1	208488-1
	28-24	Std.	208459-1	208457-1
2 (A)	28-37	Std. Rev.	208471-1 208473-1	208470-1 208472-1
	22-28	Std. Rev.	208491-1# 208493-1#	208490-1 208492-1
3 (A)	28-57	Rev. Std.	208475-1# 208477-1#	208474-1 208476-1
	22-3	Std. Rev.	208495-1 208497-1	208496-1 208498-1
4 (A)	28-7	Std. Rev.	208483-1 208485-1	208482-1 208484-1
	28-13M	Std.	211823-1	211822-1
	28-16M	Std.	208479-1	208478-1
	28-22M	Std.	208481-1	208480-1

**Note:** Contacts must be ordered separately. See Multimate Contacts page. \*Standard Sex: Pin contacts in receptacle housings; socket contacts in plug housings. Reverse Sex: Socket contacts in receptacle housings; pin contacts in plug housings. #Aluminum alloy, unplated.

## PROTECTIVE CAPS

Shell Size	Part Number
22	211903-1
28	211904-1



## CABLE CLAMPS

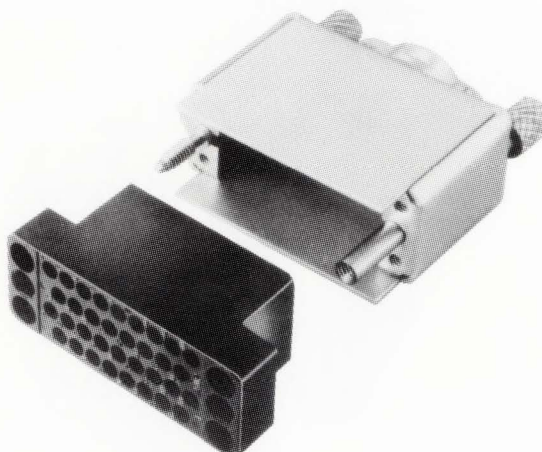
Shell Size	Part Number
14	208945-5
22	208945-7
28	208945-8

For more information, request Catalog 73-204 "CPC (Circular Plastic) and Metal-Shell CPC Connectors", AMP Standard Products Catalog and AMP Engineering Guide.

## M SERIES CONNECTORS

### FEATURES:

- High reliability.
- Most connectors intermateable with industry standard connectors made to the same specifications.
- Wide range of connector sizes and styles.
- Complete line of accessory hardware for fastening, protecting, guiding, shielding, strain relief and keying.
- Posted connectors available.
- Housings are black phenolic—also available in blue diallyl phthalate to meet MIL-C-28748 specifications.
- Contact variety: signal, power, coaxial, fiber optic and posted versions.



### M SERIES CONNECTOR AND HARDWARE SELECTION CHART

No. of Positions	Housings		Pin Hood*				180°, 2-Piece Shields*		Strain Relief*
			Internal		External				
	Plug	Receptacle	Open End	Closed End	Open End w/Flanges	Closed End	Long	Short	
6	202758-1	202757-1	204258-6	.....	.....	.....	.....	.....	203432-1
14	201355-1	201298-1	201363-4	.....	.....	201347-2	.....	.....	200686-1
20	201356-1	200346-2	201362-4	.....	.....	.....	.....	204087-1	201237-1
26	201359-1	200512-2	201758-4	.....	202118-5	201349-2#	201576-2	200514-2	201229-1
34	201357-1	200838-2	201786-4	202434-4	202095-5	201350-2#	201571-2	201517-2	201224-1
50	201358-1	200227-2	201317-4	202394-2	202096-5	201390-5	201443-2	200532-2	201182-1
75	201310-1	201311-1	.....	201369-4	202097-5	201368-4	202713-2	202713-1	200730-1
104	201345-1	201037-1	.....	201364-4	.....	201346-4	204173-2	204173-1	201221-1
104CF	201692-4†	201532-4	.....	.....	.....	202119-2	.....	.....	.....
160CF	202799-2†	202800-2	.....	203743-4	.....	203744-4	.....	.....	.....

All hardware is zinc-plated steel except where noted.

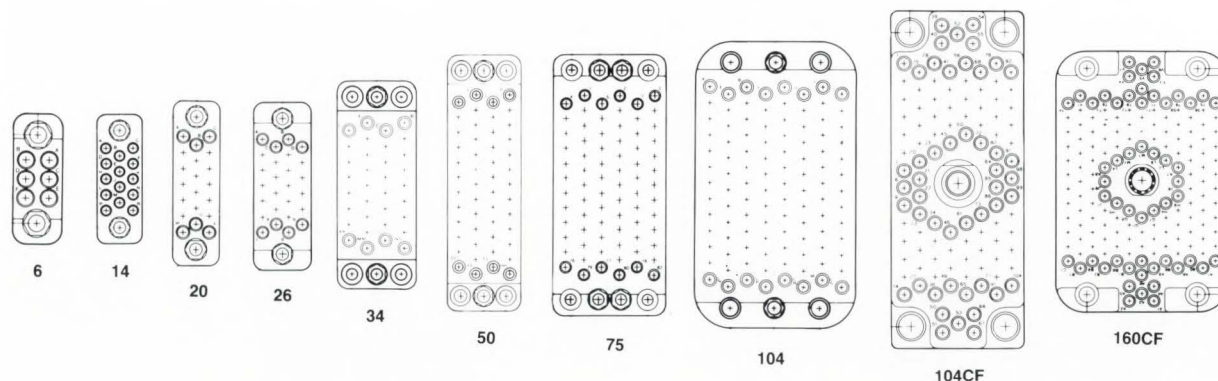
#Material is aluminum iridite.

†:T" handle fastener.

**Note:** Contacts, fastening and guiding hardware must be ordered separately. See next page for ordering guidelines. Contacts are shown on Multimatch Contact page in this section.

### TYPICAL CONNECTOR CONFIGURATION

(DRAWINGS NOT SHOWN TO SCALE)



For more information on AMP M Series Connectors, consult the following AMP Literature: Catalog 73-127 "M Series Pin and Socket Connectors"; AMP Standard Products Catalog; AMP Engineering Guide.

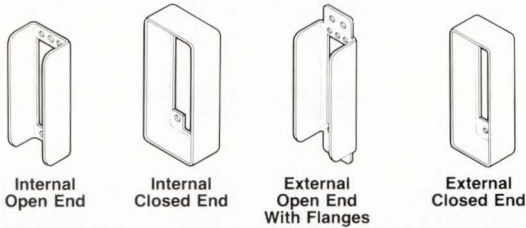


## M SERIES CONNECTOR HARDWARE

### PROTECTIVE

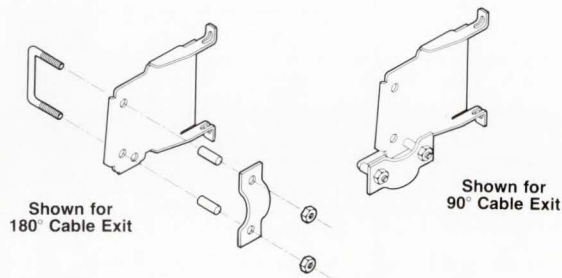
Note: Part numbers shown in chart on previous page.

#### PIN HOODS



Use external pin hood when mating with internal pin hood or with long shield.  
 Use internal or external pin hood on housing loaded with all pin contacts; no pin hood is required on mating half.  
 Do Not Use pin hood in combination with shield or strain relief clamp when using long or short turnable jackscrews.  
 Do Not Use closed-end pin hood with locking springs.

#### STRAIN RELIEF CLAMPS



#### STRAIN RELIEF CLAMPS

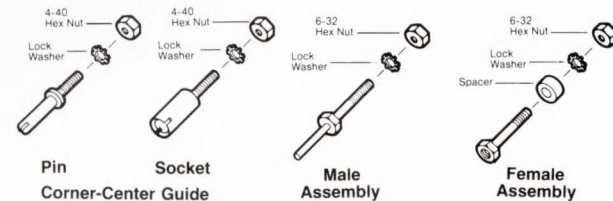
Use strain relief clamp with short-short turnable jackscrews or guide pins or sockets.

#### SHIELDS (180°, 2-PIECE)

Use two-piece shield with long turnable JACK SCREWS only.  
 Use long shield for pin protection when no pin hood is required.  
 Do Not Use two-piece shield with locking springs.

### GUIDING

#### GUIDE PINS AND SOCKETS



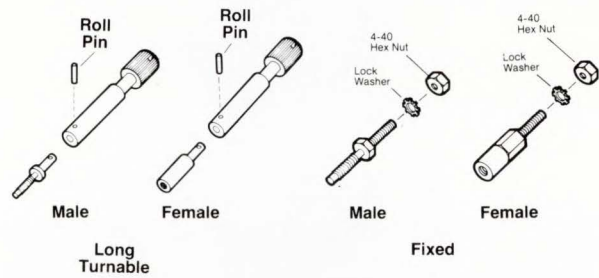
#### GUIDE PINS AND SOCKETS

Material and Finish:  
 Guide Pins and Sockets: Stainless steel.  
 Lock Washers: Stainless steel.  
 Hex Nuts: Steel, zinc plated.

Type	Part No.	Use With Connectors
Center Pin (Male)	200389-2	All except 104CF and 160CF
Center Socket (Female)	200390-2	All except 104CF and 160CF
Corner Pin (Male)	200833-2	34 and 50
Corner Socket (Female)	200835-2	34 and 50
Corner Pin (Male)	201046-2	75, 104 and 160CF
Corner Socket (Female)	201047-2	75, 104 and 160CF
Male Assembly	202173-5	104CF
Female Assembly	202174-2	104CF
Long Pin (Male)	201540-1	104CF

### FASTENING

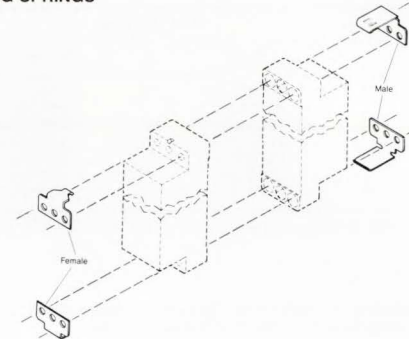
#### JACKSCREWS



Use long turnable jackscrews with two-piece shields only.  
 Use short turnable jackscrews when no shield or strain relief clamp is used.  
 Use Short-short turnable jackscrews with strain relief clamps and/or pin hoods (one or two metal thicknesses between housing and jackscrew).  
 Do Not Use long or short turnable jackscrews when using pin hoods in combination with shields or strain relief clamps.  
 Do Not Use jackscrews with locking springs.  
 Do Not Use jackscrews with center guide pins or sockets.

Style	Jack Screw Part No. 6-32 (M3.5 x 0.6) Double Lead Thread	Use With Connectors
Long-Long Male	201911-1	50, 75 and 104
Long-Long Female	201910-1	
Long Male	200871-1	20, 26, 34, 41,
Long Female	200867-1	50, 75 and 104
Short Male	200868-1	6, 14, 20, 21, 26,
Short Female	200807-1	34, 41, 50, 75 and
Short-Short Male	201388-1	104
Short-Short Female	201389-1	

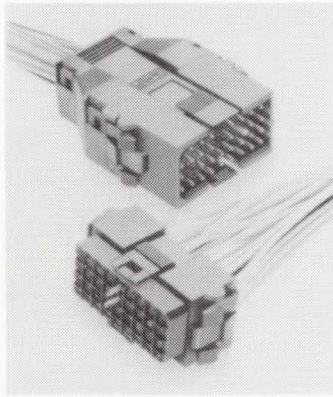
#### LOCKING SPRINGS



Use locking springs with one-piece shields or strain relief clamps.  
 Do Not Use locking springs with jackscrews.  
 Do Not Use locking springs with closed-end pin hoods.  
 Do Not Use locking springs with two-piece shields.

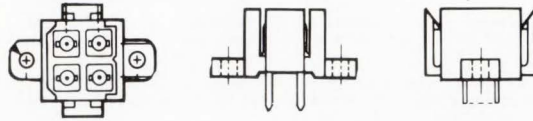
Locking Spring Part No.		Use With Connector
Male (Spring Member)	Female (Latching Member)	
201921-1	201922-1	6, 14, 20 26 34 and 50
201923-1	201924-1	
201925-1	201926-1	

## METRIMATE CONNECTORS

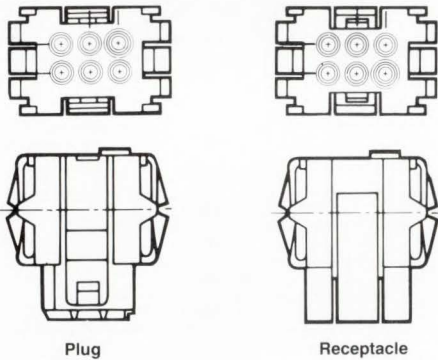


- Designed to meet IEC (440 V) requirements.
- True metric dimensions—contacts on 5 mm (.197") centers.
- Polarized housings.
- 4- thru 36-circuit rectangular configurations can be mounted to and removed from either front or rear of panel. No hardware required for mounting.
- Multimate housings accept power, signal and coaxial contacts.
- Strain reliefs available for 6- thru 36-circuit housings.

### RECTANGULAR PIN HEADERS (WITH MOUNTING EARS)



### RECTANGULAR CONNECTORS (FREE-HANGING AND PANEL-MOUNT)



Plug

Receptacle

No. of Positions	Plating	Part Number
4	Tin	207119-1
	Gold*	207119-3
6	Tin	207158-1
	Gold*	207158-3
9	Tin	207441-1
	Gold*	207441-3
12	Tin	207120-1
	Gold*	207120-3
18	Tin	207444-1
	Gold*	207444-3
24	Tin	206763-1
	Gold*	206763-3
36	Tin	207121-1
	Gold*	207121-3

\*0.00076 mm (.000030") gold over 0.00127 mm (.000050") nickel.

### STRAIN RELIEF KITS

No. of Connector Positions	Cable O.D. Max. mm (in.)	Part Number
6	9.5 (.375)	207600-1
9	11.7 (.460)	207601-1
12	13.45 (.530)	207602-1
18	16.5 (.650)	207603-1
24	19.05 (.750)	207088-1
36	23.3 (.918)	107604-1

No. of Positions	Part Numbers	
	Plug	Receptacle
4	207015-1	207016-1
6	207152-1	207153-1
9	207439-1	207440-1
12	207017-1	207018-1
18	207442-1	207443-1
24	207304-1	207305-1
36	207019-1	207020-1

**Note:** Contacts must be ordered separately. See Multimate Contacts page in this section.

For more information on Metrimate Connectors, consult the following AMP Literature: Catalog 76-362 "Metrimate Pin and Socket Connectors"; AMP Standard Products Catalog; AMP Engineering Guide.



### FEATURES

- Crimp, snap-in contacts.
- Designed for ease of post molding.
- Pre-molded cord guard.
- Tin plated brass contacts.
- Ferrule crimps onto shield for reliable termination.
- Meets or exceeds DIN specification 41524 for 3- and 5-position plugs; 45322 for 6-position plug.
- Recognized under the Component Program for Underwriters Laboratories Inc., File No. E28476.
- Certified by Canadian Standards Association, File No. LR-35510.

Available in 3- through 8-position configurations. Excellent shielding for low power signal transmission applications. Shielded receptacles are available for greater EMI shielding effectiveness. Plugs are interchangeable and intermateable with other DIN standard connectors with equivalent number of contacts.

### CIRCULAR DIN PLUG KIT

**Note:** Contacts must be ordered separately.

#### Materials:

**Housing:** Black nylon, 94V-0 rated.

**Ferrule and Shield:** Brass, tin plated.

**Cord Guard:** Thermoplastic polymer, black.



### SHIELD/HOUSING

No. of Positions	Part Number
3	212437-1
4	212437-2
5	212437-3
6	212437-4
7	212437-5
8	212437-6

### FERRULE\*

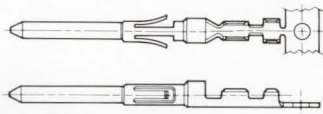
Cable Diameter Range In. (mm)	Part Number
.165-.200 (4.19-5.08)	212435-7
.200-.250 (5.08-6.35)	212435-8
.250-.300 (6.35-7.62)	212435-9

\*See bottom chart for crimping tool and die sets.

### CORD GUARD

Cable Diameter Range In. (mm)	Part Number
.165-.250 (4.19-6.35)	212800-1
.250-.350 (6.35-7.62)	212800-3

### PIN CONTACTS



**Material:** Copper alloy.

**Plating:** .000050" (0.00127 mm) min. tin over nickel; .000100" (0.00254 mm) silver over copper available.

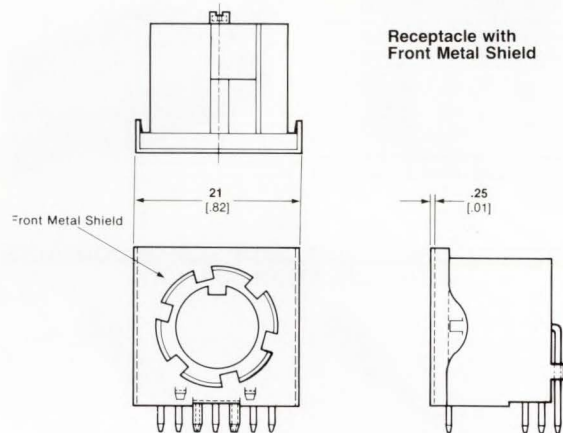
Wire Size Range (AWG)	Loose Piece Part Number	Hand Tool
28-22	66728-5	90407-1

### FERRULE CLINCHING DIES (FOR HAND TOOL No. 67910-1)

Cable Dia. Range In. (mm)	Die Set Part No.
.165-.445 (4.19-4.45)	58215-1
.175-.200 (4.45-5.08)	58215-2
.200-.225 (5.08-5.72)	58215-3
.225-.250 (5.72-6.35)	58215-4
.250-.275 (6.35-6.99)	58215-5
.275-.300 (6.99-7.62)	58215-6

**CONTACT INSERTION TOOL**  
Part No. 91002

**CONTACT EXTRACTION TOOL**  
Part No. 91144-1



### CIRCULAR DIN RECEPTACLES

**Materials:**

**Housing:** Black nylon, 94V-0 rated.

**Contacts and Shield:** Brass, tin plated.

No. of Positions	Part Number
3	212042-1
4	212043-1
5	212044-1
6	212045-1
7	212046-1
8	212047-1

For more information on AMP Circular DIN Connectors, consult the following AMP Literature: Catalog 83-700 "Shielded Circular DIN Connectors" Catalog 82-683 "Shielded and Filtered Products for EMC"; AMP Standard Products Catalog; AMP Engineering Guide.

## AMPLIMITE SUBMINIATURE D HD-20 CONNECTORS

### FEATURES

- Available in various styles—metal-shell connectors with plastic inserts, front metal-shell connectors with plastic housings and all-plastic connectors.
- HD-20 connectors for discrete wire terminations, PC board mounting and wrap-type terminations.
- HDE-20 connectors for mass termination of discrete wire, jacketed cables and ribbon cables (with conductors separated).
- Shell sizes 1 thru 5 offer wide choice of contact positions; 9, 15, 25, 37 and 50.
- HDP-20 metal-shell connectors accept size 20 DF (precision formed) and 20 DM (screw-machined) contacts; captivated plastic retention tines eliminate need for spring clips.
- Thermoplastic material, flame retardant.
- Numerous accessories available for strain relief and cable clamping, shielding, connector-to-connector mating, connector-to-PC board mounting, circuit commoning and keying.
- Machine applied terminations assure highest production at lowest applied cost.

### CRIMP SNAP-IN CONTACT CONNECTORS

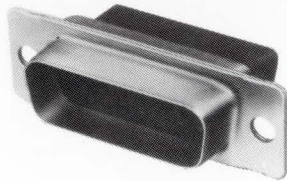
Subminiature D connectors with crimpable contacts. Tin-plated plugs with or without grounding indents. Tin-plated receptacles are also available.

### PLUGS

(ZINC PLATED SHELLS)

No. of Positions	Part Number
9	205204-1
15	205206-1
25	205208-1
37	205210-1
50	205212-1

**Note:** Contacts must be ordered separately.

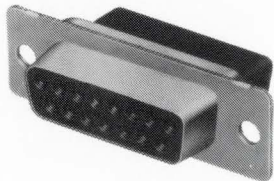


### RECEPTACLES

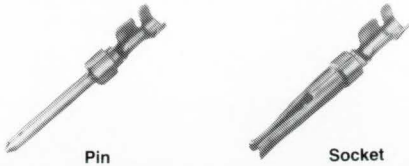
(ZINC PLATED SHELLS)

No. of Positions	Part Number
9	205203-1
15	205205-1
25	205207-1
37	205209-1
50	205211-1

**Note:** Contacts must be ordered separately.



## PRECISION FORMED 20 DF CRIMP SNAP-IN CONTACTS WITH INSULATION SUPPORT



Wire Size Range	Contact Finish Plating Code	Contact No.				Hand Tool For Loose Piece
		Strip Form		Loose Piece		
		Pin	Socket	Pin	Socket	
24-20	A B	66506-3 66506-4	66504-3 66504-4	66506-9 1-66506-0	66504-9 1-66504-0	603547-1 90312-1

**Material:** Pin, brass; socket, phosphor bronze.

### Finish:

- A: Gold flash over .000050" nickel on entire contact, with additional .000030" gold on mating end for length of .150" min. (pin); .100" min. (socket).
- B: Gold flash over .000030" nickel.

### INSERTION/EXTRACTION TOOL FOR CRIMP-TYPE CONTACTS

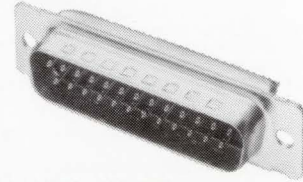


Part No. 91067-2—24-20 AWG.

For more information on AMPLIMITE Connectors, consult the following AMP Literature: Catalog 79-546 "AMPLIMITE Subminiature D, HD-20 (High-Density) Pin and Socket Connectors"; AMP Standard Products Catalog; AMP Engineering Guide.

## SOLDER CUP CONNECTORS

Subminiature D connectors with preloaded solder cup contacts. **Contacts:** phosphor bronze, duplex plated with gold flash on mating end for length of .150" min.; .000150-.000300" tin-lead on solder cup, with entire contact underplated with .000030" nickel.



### TIN PLATED SHELL PART NUMBERS

No. of Contact Positions	Plug Assembly	Receptacle Assembly
9	747904-2	747905-2
15	747908-2	747909-2
25	747912-2	747913-2
37	747916-2	747917-2

## ONE-PIECE STRAIGHT/45° EXIT CABLE CLAMP ASSEMBLY

Can be used for either plug or receptacle. Hinged construction allows easy assembly to a harness. Straight or 45° angle of cable exit is achieved by merely positioning the cable support gate.

Shell Size (No. of Contact Positions)	Max. Cable Dia. Inch (mm)	Std. Cable Clamp Assembly Part No.
1 (9)	.256 (6.50)	205729-1
2 (15)	.320 (8.13)	205730-1
3 (25)	.420 (10.67)	205718-1
4 (37)	.490 (12.45)	205731-1
5 (50)	.600 (15.24)	205732-1

**Cable Clamp Housing:** Black thermoplastic, textured finish.

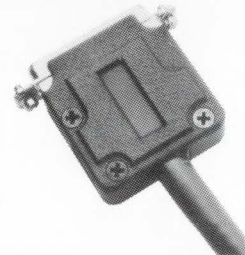
**Gates:** Black thermoplastic.

**Pan Head Screws:** 6-32 set screw and 6-32 square nut—zinc-plated steel.



## ONE-PIECE STRAIGHT/90° EXIT CABLE CLAMP ASSEMBLIES

Cable openings are provided for straight and 90° cable exit. Angle of cable exit is achieved by removing the blank gate from the desired opening, positioning the cable through the opening and inserting the proper Cable Support Gate for the cable dia. of the connector. Cable support gates are supplied with each cable clamp assembly to achieve adjustable clamping over a wide range of cable diameters.



Shell Size (No. of Contact Positions)	Max. Cable Dia. Inch (mm)		Cable Clamp Assembly Part No.
	Straight Cable Exit	90° Cable Exit	
1 (9)	.250 (6.35)	.250 (6.35)	207467-1
2 (15)	.325 (8.26)	.325 (8.26)	207470-1
3 (25)	.500 (12.70)	.500 (12.70)	207435-1
4 (37)	.675 (17.15)	.500 (12.70)	207473-1
5 (50)	.500 (12.70)	.500 (12.70)	207476-1

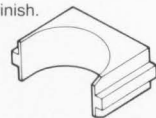
### Material and Finish:

**Cable Clamp Housing:** Black thermoplastic, textured finish.

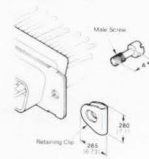
**Gates:** Black thermoplastic.

**Flat Head Screws:** Black, zinc-plated steel.

Typical Cable Support Gate (Supplied with Cable Clamp Assemblies)

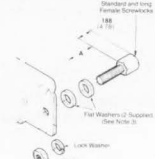


## MALE SCREW RETAINERS FOR METAL-SHELL CONNECTORS (HDP-20, HDE-20)



Kit No. 205980-1  
Male Screw Finish: Yellow chromate.

## FEMALE SCREWLOCKS FOR METAL-SHELL CONNECTORS (HDP-20, HDE-20)



Kit No. 205817-1  
Thread Size: 4-40.  
Finish: Yellow Chromate.



## HDE SUBMINIATURE D CONNECTORS

- Discrete wire insulation displacement connector system.
- Plug and receptacle assemblies available in all-plastic or metal-shell configurations.
- All-plastic housings are 94V-0 rated thermoplastic.
- Metal shell connectors use tin-plated shells

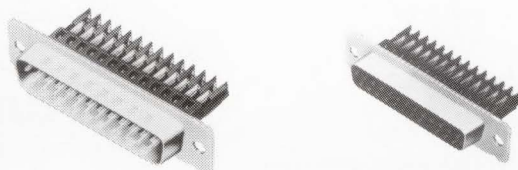
### All-Plastic



Plug

Receptacle

### Metal-Shell



Plug

Receptacle

### PLUGS

No. of Contact Positions	Contact Finish (Plating Code)	Part Number (26-22 AWG)	
		Metal Shell	All Plastic
9	A	745492-2	745203-2
	B	745492-5	745203-5
15	A	745494-2	745207-2
	B	745494-5	745207-5
25	A	745496-2	745211-2
	B	745496-5	745211-5
37	A	745498-2	745215-2
	B	745498-5	745215-5

### RECEPTACLES

No. of Contact Positions	Contact Finish (Plating Code)	Part Numbers (26-22 AWG)	
		Metal Shell	All Plastic
9	A	745491-2	745201-2
	B	745491-5	745201-5
15	A	745493-2	745205-2
	B	745493-5	745205-5
25	A	745495-2	745209-2
	B	745495-5	745209-5
37	A	745497-2	745213-2
	B	745497-5	745213-5

### Material and Finish:

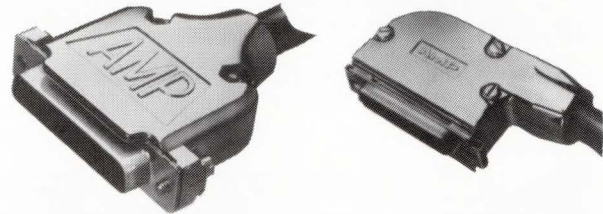
- A:** .000030" (0.00076 mm) gold on mating end for length of .150" (3.81 mm) min.; .000100-.000200" (0.00254-0.00508 mm) bright tin or bright tin-lead on termination end, with entire contact underplated with .000050" (0.00127 mm) nickel.
- B:** Gold flash on mating end for length of .150" (3.81 mm) min.; .000100-.000200" (0.00254-0.00508 mm) bright tin or bright tin-lead on termination end, with entire contact underplated with .000030" (0.00076 mm) nickel.

### TOOLING

Use Manual Pistol Grip Tool No. 58074-1 with Head No. 58063-1 or Arbor Tool No. 91085-2 with Termination Die Set No. 91255-1. Contact Extraction Tool No. 91232-1.

## RFI/EMI METAL SHIELDS FOR JACKETED CABLES (TWO-PIECE)

Designed specifically for jacketed cable, and are ideally suited for RFI/EMI shielding applications. Two-piece construction permits easy assembly to jacketed cable. Available with straight or 90° cable exit. Can be used with Crimp-Snap, solder cup or HDE connectors. Complete assembly requires shield kit and ferrule.



Straight Exit RFI/EMI Shields

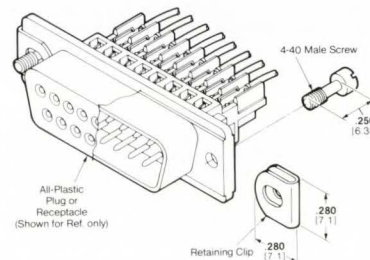
90° Degree RFI/EMI Shields

No. of Contact Positions	Max. Cable Dia. (In.)	Part Number		
		Shield Kit		Split Ring Ferrule <sup>®</sup>
		Straight Exit	90° Exit	
9	.200	745171-2	.....	745508-2
	.240	745171-1	.....	745508-3
15	.225	745172-3	745652-4	745508-3
	.300	745172-2	745652-3	745508-4
	.375	745172-1	745652-2	745508-6
25	.280	745173-5	745653-5	745508-4
	.350	745173-4	745653-4	745508-5
	.430	745173-3	745653-3	745508-1
	.480	745173-2	745653-2	745508-8
	.530	745173-1	745653-1	745508-9
	37	.350	745174-5	.....
.430		745174-4	.....	745508-1
.500		745174-3	.....	745508-8
50	.575	745174-2	.....	1-745508-0
	.650	745174-1	.....	1-745508-1
	.375	745175-6	.....	745508-6
	.450	745175-5	.....	745508-7
	.525	745175-4	.....	745508-9
60	.600	745175-3	.....	1-745508-0
	.675	745175-2	.....	1-745508-1
	.750	745175-1	.....	1-745508-2

<sup>®</sup>Use tape to increase cable diameter, if necessary.

### METAL SCREW RETAINERS FOR ALL-PLASTIC CONNECTORS (HDE-20)

Kit No. 745647-1 (two assemblies per package).



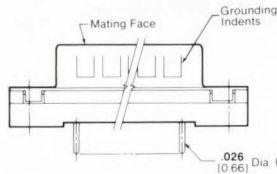
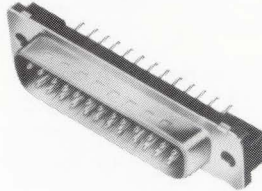
For more information on AMPLIMITE Connectors, consult the following AMP Literature: Catalog 79-456 "AMPLIMITE Subminiature D, HD-20 (High Density) Pin and Socket Connectors"; AMP Standard Products Catalog; AMP Engineering Guide.

## HD-20 CONNECTORS (WITH .026" (0.66 mm) DIA. STRAIGHT POSTED CONTACTS)

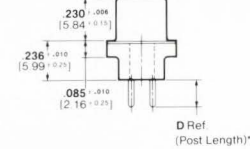
### FEATURES:

- Available in metal shell or all-plastic versions.
- Choice of post lengths.
- .000030" gold duplex plated contacts—alternate platings available.
- Integral standoffs provide stability.
- Available with mounting hardware installed.
- Metal shell plugs feature grounding indents.
- .026" diameter posts.

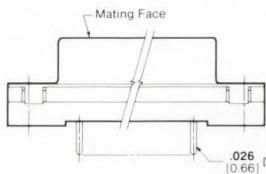
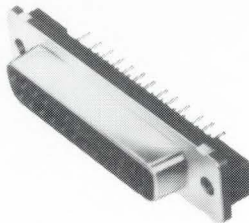
### METAL SHELL PLUG ASSEMBLIES (WITH INTEGRAL STANDOFFS AND GROUNDING INDENTS) .120" (standard) mounting holes.



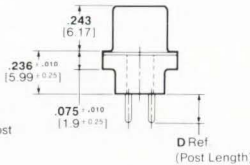
No. of Contact Positions (Shell Size)	Post Lgth.* (In.)	Part No. With Standard Mtg. Holes
25 (3)	.125 .170	745968-2 745968-4
37 (4)	.125 .170	747375-2 747375-4



### METAL SHELL RECEPTACLE ASSEMBLIES (WITH INTEGRAL STANDOFFS) .120" (standard) mounting holes.



No. of Contact Positions (Shell Size)	Post Lgth.* (In.)	Part No. With Standard Mtg. Holes
9 (1)	.125 .170	747150-2 747150-4
15 (2)	.125 .170	747229-2 747229-4
25 (3)	.125 .170	745967-2 745967-4
37 (4)	.125 .170	747301-2 747301-4



### ALL PLASTIC VERSION

#### Material and Finish:

**Front Shell:** Steel, tin plated.

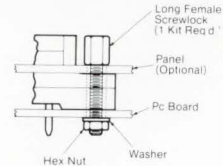
**Housing:** Black thermoplastic, 94V-0 rated.

**Pin Contacts (Posted):** Brass, plated as follows: gold flash over .000050" (0.00127 mm) nickel on entire contact, with additional .000030" (0.00076 mm) gold on mating end for length of .150" (3.51 mm).

**Socket Contacts (Posted):** Phosphor bronze, plated as follows: Gold flash over .000050" (0.00127 mm) nickel on entire contact, with additional .000030" (0.00076 mm) gold on mating end for length of .100" (2.54 mm).



With Integral Standoff



Application of connector with integral Standoff and standard mounting holes using Long Female Screwlock Kit No. 207719-1

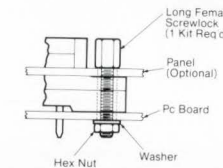
### PLUG ASSEMBLIES (WITH INTEGRAL STANDOFFS) .120" (standard) mounting holes.

No. of Contact Positions (Shell Size)	Post Lgth.* (In.)	Part No. With Standard Mtg. Holes
9 (1)	.125 .170	208006-2 208006-4
15 (2)	.125 .170	208007-2 208007-4
25 (3)	.125 .170	208008-2 208008-4
37 (4)	.125 .170	208009-2 208009-4
50 (5)	.125 .170	208010-2 208010-4

### RECEPTACLE ASSEMBLIES (WITH INTEGRAL STANDOFFS) .120" (standard) mounting holes.



With Integral Standoff



Application of connector with Integral Standoff and standard mounting holes using Long Female Screwlock Kit No. 207719-1

No. of Contact Positions (Shell Size)	Post Lgth.* (In.)	Part No. With Standard Mtg. Holes
9 (1)	.125 .170	207826-2 207826-4
15 (2)	.125 .170	207827-2 207827-4
25 (3)	.125 .170	207828-2 207828-4
37 (4)	.125 .170	207829-2 207829-4
50 (5)	.125 .170	207830-2 207830-4

\*.125" (3.18 mm) post length is recommended for PC board thickness of .062" (1.57 mm); .170" (4.32 mm) is recommended for PC board thickness of .093" (2.36 mm) and .125" (3.18 mm).

For more information on this product, consult the following AMP Literature: Catalog 79456 "AMPLIMITE Subminiature D, HD-20 (High Density) Pin and Socket Connectors"; AMP Standard Products Catalog; AMP Engineering Guide.



## AMPLIMITE HDP-20 CONNECTORS—RIGHT ANGLE PC BOARD MOUNT

### FEATURES

- Available in metal shell or all plastic versions.
- .318 and .590 footprint mount offered.
- 9, 15, 25 and 37 positions.
- Metal shell plugs have grounding indents for positive contact.
- Grounding strap on metal shell connectors.
- Also available with mounting hardware installed.
- .026 dia. posts.
- .125 tail length accommodates maximum board thickness of .093".
- 30 mil gold duplex plated contacts; flash plating available.

### Materials and Finish:

**Front Shell:** Steel, tin plated.

**Housing:** Black thermoplastic, 94V-0 rated.

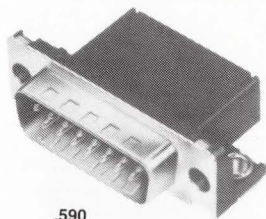
**Eyelets:** Brass, tin plated.

**Pin Contacts (Posted):** Brass, duplex plated as follows: .000030" gold on mating end for length of .150" min.; .000100-.000200" bright tin or bright tin-lead on termination end, with entire contact underplated with .000050" nickel.

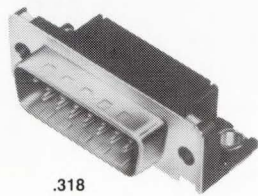
**Socket Contacts (Posted):** Phosphor bronze, duplex plated as follows: .000030" gold on mating end for length of .100" min.; .000100-.000200" bright tin or bright tin-lead on termination end, with entire contact underplated with .000050" nickel.

## METAL SHELL CONNECTORS—WITH GROUNDING STRAPS OR INDENTS

### PLUGS—METAL SHELL



.590



.318

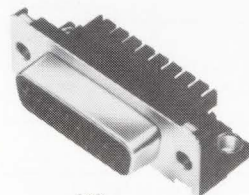
.125" dia. mounting holes. All plugs have grounding indents and grounding straps.

No. of Contact Positions (Shell Size)	Plug Part Numbers	
	.590" Mount	.318" Mount
9 (1)	745990-2	747250-2
15 (2)	745986-2	747236-2
25 (3)	745994-2	747238-2
37 (4)	745998-2	747252-2

### RECEPTACLES—METAL SHELL



.590



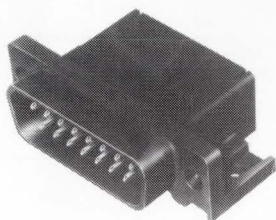
.318

.125" dia. mounting holes. All receptacles have grounding straps.

No. of Contact Positions (Shell Size)	Receptacle Part Numbers	
	.590" Mount	.318" Mount
9 (1)	745988-2	745781-2
15 (2)	745984-2	745782-2
25 (3)	745992-2	745783-2
37 (4)	745996-2	745784-2

## ALL PLASTIC CONNECTORS

### PLUGS—ALL PLASTIC

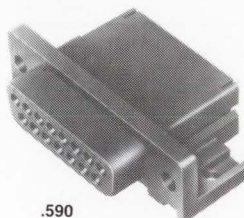


.590

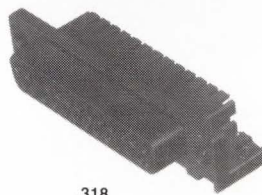
.125" dia. mounting holes. .026" right-angle posted contacts, .590" mount.

No. of Contact Positions (Shell Size)	Plug Part No.
	.590" Mount
9 (1)	747467-2
15 (2)	747468-2
25 (3)	747469-2
37 (4)	747470-2

### RECEPTACLES—ALL PLASTIC



.590



.318

.125" dia. mounting holes. .026" dia. right-angle posted contacts. Choice of .590" or .318" mount.

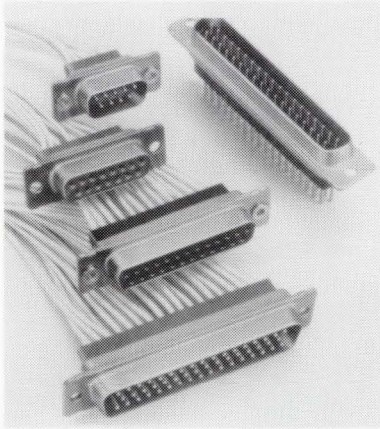
No. of Contact Positions (Shell Size)	Receptacle Part Numbers	
	.590" Mount	.318" Mount
9 (1)	747459-2	745131-2
15 (2)	747460-2	745271-2
25 (3)	747461-2	745132-2
37 (4)	747462-2	745093-2

For more information on AMPLIMITE Connectors, consult the following AMP Literature: Catalog 74-546 "AMPLIMITE Subminiature D HD-20 (High Density) Pin & Socket Connectors; AMP Standard Products Catalog; AMP Engineering Guide.



# MIL-C-24308 Connectors

## SERIES 109 CONNECTORS (HDM-20)—PER MIL-C-24308



### PLUGS

Number of Contact Positions (Shell Size)	Standard Mount	
	Military Part No. M24308/	AMP Part No.
9 (1)	4-259	205162-1
15 (2)	4-260	205164-1
25 (3)	4-261	205166-1
37 (4)	4-262	205168-1
50 (5)	4-263	205170-1

### RECEPTACLES

Number of Contact Positions (Shell Size)	Standard Mount	
	Military Part No. M24308/	AMP Part No.
9 (1)	2-281	205161-1
15 (2)	2-282	205163-1
25 (3)	2-283	205165-1
37 (4)	2-284	205167-1
50 (5)	2-285	205169-1

#### Material and Finish:

**Shell:** Steel, Class G, zinc-plated per ASTM B-633.  
**Insert:** Approved material per MIL-C-24308 specifications.  
**Retention Springs:** Stainless steel.

## SERIES 20 DM SCREW-MACHINED CONTACTS FOR SERIES 109 CONNECTORS



Pin  
M39029/64-369  
(Supersedes M24308/11-1)



Socket  
M39029/63-368  
(Supersedes M24308/10-1)

### SIZE 20 DM CRIMP, SNAP-IN CONTACTS

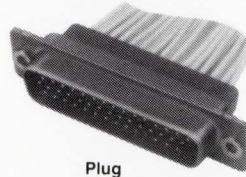
Pin Diameter: .040" (1.02 mm).

Wire Size Range (AWG)	Insul. Dia. Max. (In.)	Contact Configuration	Loose Piece Contacts		Hand Tool	
			Military Part No. M39029/	AMP Part No.	Tool No. M22520/	Positioner No. M22520/
24-20	.068	Pin	64-369	205089-1	2-01	2-08
		Socket	63-368	205090-1	2-01	2-08

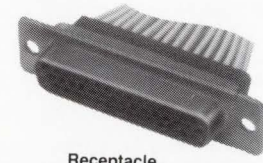
#### Material and Finish:

**Pin Contacts:** Copper alloy per ASTM B-301, gold plated per MIL-G-45204, .000050-.000100" (0.00127-0.00254 mm) thick over copper per MIL-C-14550, .000100-.000150" (0.00254-0.00381 mm). **Socket Body:** Beryllium copper per QQ-C-530, gold plated per MIO-G-45204, .000050-.000100" (0.00127-0.00254 mm) thick over copper per MIL-C-14550, .000100-.000150" (0.00254-0.00381 mm).

## SERIES 90 PLUGS (HDD-22)—PER MIL-C-24308



Plug



Receptacle

Number of Contact Positions (Shell Size)	Standard Mount	
	Military Part No. M24308/	AMP Part No.
15 (1)	4-264	20401-1
26 (2)	4-265	20403-1
44 (3)	4-266	20405-1
62 (4)	4-267	20407-1
78 (5)	4-268	20409-1
104 (6)	4-269	20411-1

## SERIES 90 RECEPTACLES (HDD-22)—PER MIL-C-24308

Number of Contact Positions (Shell Size)	Standard Mount	
	Military Part No. M24308/	AMP Part No.
15 (1)	2-286	204500-1
26 (2)	2-287	204502-1
44 (3)	2-288	204504-1
62 (4)	2-289	204506-1
78 (5)	2-290	204508-1
104 (6)	2-291	204510-1

## SERIES 22 DM SCREW-MACHINED CONTACTS FOR SERIES 90 CONNECTORS

Pin  
M39029/58-360



Socket  
M39029/57-354



### SIZE 22 DM CRIMP SNAP-IN CONTACTS

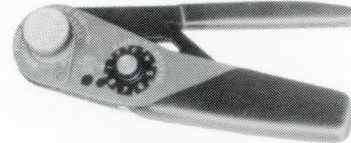
Pin Dia.: .030" (0.76 mm).

Wire Size Range (AWG)	Insul. Dis. Max. (In.)	Contact Configuration	Loose Piece Contacts		Hand Tool	
			Military Part No. M39029/	AMP Part No.	Tool No. M22520/	Positioner No. M22520/
28-22	.054	Pin	58-360	204370-2	2-01	2-09
		Socket	57-354	204351-1	2-01	2-06



### PIN AND SOCKET INSERTION/EXTRACTION TOOL

AMP Part No. 91067-1 or MIL No. M81969/1-04.



### HAND CRIMPING TOOL (REQUIRES POSITIONER)

Military No. M22520/2-01  
AMP Part No. 601966-1

### POSITIONERS

Military No.	AMP Part No.
M22520/2-06	601966-4
M22520/2-08	601966-5
M22520/2-09	601966-6

For more information on AMP MIL-C-24308 Connectors, consult the following AMP Literature: Catalog 79-547 "AMPLIMITE Subminiature D Pin and Socket Connectors per MIL-C-24308"; AMP Standard Products Catalog; AMP Engineering Guide.



### DIPLOMATE SOCKET FEATURES

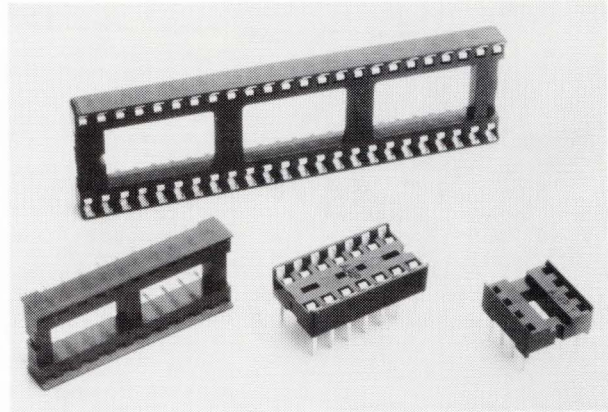
- Low profile
- Full wipe contacts for high reliability and consistent low resistance
- Anti-overstress prevents contact damage
- Large target area
- Housing standoffs and slots facilitate board cleaning
- Visual polarization
- Choice of contact material and plating
- Stackable end-to-end or side-by-side.
- Tube loaded for protection; compatible with automatic insertion equipment
- Recognized under the component Program of UL, File E-28476
- Meets material requirements of Table 32.1 of UL 1410 Standard for TV receivers and video equipment.

#### DL (DUAL LEAF)

- Dual wiping contacts
- 6-64 positions
- Closed bottom design inhibits solder wicking and flux contamination

#### SL (SINGLE LEAF)

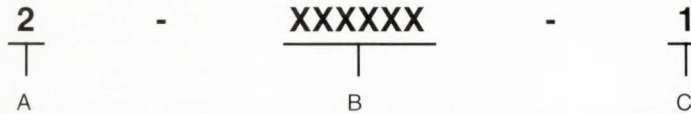
- 8-40 positions
- Military version available
- Accepts rectangular leads up to .015" × .030" (0.38 × 0.76 mm)



### BASE PART NUMBERS

No. of Positions	Centerline	Ladder Style		
		Solid Body Dual Leaf (DL)	Dual Leaf (DL)	Single Leaf (SL)
6	.300	641296	.....	.....
8	.300	640463	.....	641866
14	.300	640357	641599	641867
16	.300	640358	641600	641868
18	.300	640359	641601	641869
20	.300	640464	641602	641870
22	.400	640360	641603	641871
24	.300	.....	641932	.....
26	.600	640361	641604	641872
28	.600	640362	641605	641873
40	.600	640379	641606	641874
48	.600	.....	643574	.....
50	.900	.....	643575	.....

### PART NUMBER GUIDE



**A** 2—Tube Loaded (compatible with automatic insertion equipment).

**B** Base Part Number:  
Select from chart above.

**C** Contact Material and Finish:  
 1—Tin-plated beryllium copper  
 2—.000030" gold-plated beryllium copper  
 3—Tin-plated phosphor bronze  
 4—.000015" gold-plated phosphor bronze

Housing Material and Finish: Glass-filled thermoplastic, 94V-0 rated, black.

DIPLOMATE SOCKETS SHOWN ARE ALSO AVAILABLE WITH RETENTION LEG FEATURE  
CONTACT YOUR LOCAL AMP DISTRIBUTOR

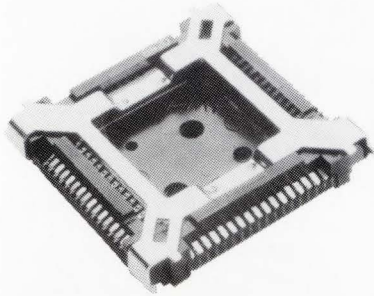
### OTHER DIPLOMATE PRODUCTS

SIMM Sockets  
 SIP Sockets (3-25 positions)  
 HT—High Temperature Burn-In

LF—Low force  
 LIF—Lock  
 ZIF—Lock  
 ZP Sockets

For more information on DIPLOMATE Products, consult the following AMP Literature: Catalog 79-552 "DIP Sockets, Strip Receptacles and Miniature Spring Sockets;" AMP Standard Products Catalog; AMP Engineering Guide.

## LOW HEIGHT CHIP CARRIER (LHCC) SOCKETS



### MATERIALS

**Housing:** Polyphenylene sulfide, glass filled.  
**Contacts:** Beryllium copper with gold over nickel plating in substrate area and tin-lead over nickel in solder tail area.  
**Lid, Thruster and Ground Clip:** Steel.

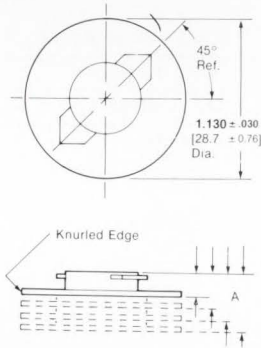
### FEATURES

- Accepts JEDEC Type A, Type B and Type D leadless ceramic substrates
- Overall height above PC board with substrate installed, .275" (6.99 mm) max. (44 through 84 positions); .350" (8.89 mm) max. (100 positions).
- Substrate cover is profiled to accommodate heat sinks
- Heat sinks and heat sink cover assemblies are available for 68 position socket (see below).
- Contact solder tails on .100" (2.54 mm) square grid
- Solder tail lengths available in .110" (2.79 mm) or .140" (3.56 mm)
- Connector and substrate polarizing features
- Duplex plated contacts
- Easy access probing with substrate installed
- Cover attached with no tools and removed with screwdriver
- Simple hand tool available to speed installation on PC board
- 150° C temperature rating; suitable for burn-in applications.

No. of Pos.	Assembly No.	No. of Pos.	Assembly No.
44	55232-1	84	55225-1
52	55227-1	100	55219-1
68	55159-1		
Ground Clip for 68 position socket (2 required, customer installed)			55160-2
Insertion Tool for 44 and 52 position sockets			68382-1
Insertion Tool for 68, 84 and 100 position sockets			68381-1

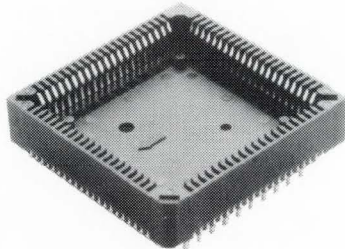
**Note:** For more information on this product, consult AMP Data Sheet No. 78-511 "Chip Carrier Sockets—Low Height", AMP Standard Products Catalog or AMP Engineering Guide.

### HEAT SINKS FOR 68 POSITION SOCKETS (LHCC ONLY)



No. of Fins	Dim. A Max. Hght. In. (mm)	Part Number
1	.165 (4.19)	55375-1
2	.245 (6.22)	55375-2
3	.325 (8.26)	55375-3
4	.405 (10.29)	55375-4

## HIGH PRESSURE TIN (HPT) CHIP CARRIER SOCKET



### MATERIALS

**Housing:** Polyphenylene sulfide, 40% glass-filled, UL 94V-0 rated, 222°C.  
**Contacts:** Phosphor bronze, plated 93% tin/7% lead over nickel on entire contact.  
**Note:** Other housing and contact materials available; information on request.

### FEATURES

- Accepts JEDEC plastic chip carriers with tin-plated leads
- Two versions available; solder tail on .100" (2.54 mm) grid and surface mount on .050" (1.27 mm) centers per JEDEC footprint
- Overall height above PC board with plastic chip carrier installed, .340" (8.64 mm) max. with contact standoff
- Visual aids for easy registration
- Contact design permits short electrical path
- Easy access probing with chip carrier installed
- Rigid solder tails make installation into PC board simple
- Simple hand tools for chip carrier socket mounting and chip carrier removal
- Standoffs for cleaning and heat dissipation
- 200 grams min. normal force per contact
- Staggered-height solder tails facilitate installation on PC board
- Housing can be removed from soldered contacts for inspection and repair

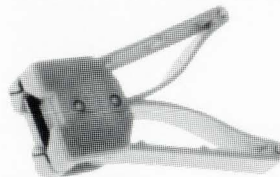
No. of Pos.	Part Number	
	With .020" Standoffs and .100" Tail Lgth.	Surface Mount
44	821575-1	821548-1
52	821551-1	821550-1
68	821574-1	821542-1
84	821573-1	821546-1

**Note:** For information on this product, consult AMP Data Sheet No. 83-734, AMP Standard Products Catalog or AMP Engineering Guide.

### ALIGNMENT AND EXTRACTION TOOLS

AMP alignment tools are used for installing solder tail sockets onto PC boards. The extracting tools provide a quick, easy method of removing the chip carrier from solder tail and surface mount sockets.

### EXTRACTION TOOLS (HPT)



No. of Pos.	Extraction Tool No.
44	821591-1
52	821648-1
68	821566-1
84	821590-1

### ALIGNMENT TOOLS



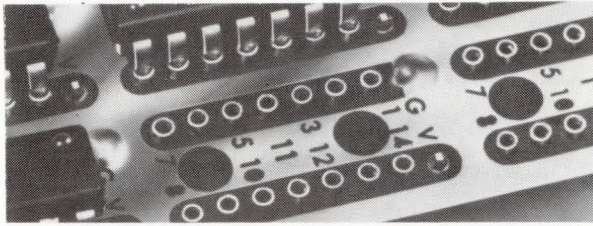
Alignment Tool Nos.	For No. of Positions	
	Low Height Socket	HPT
68381-1	68, 84, 100	68, 84
68382-1	44, 52	.....
821663-1	.....	44, 52





# Miniature Spring Sockets

## MINIATURE SPRING SOCKETS FOR HAND OR AUTOMATIC INSERTION



Bellmouth design allows easy plugability. Helical spring design accepts round, flat or rectangular leads without concern for socket orientation. Wide range of socket sizes covers pin ranges of .010" to .065" diameter and board thickness of .031" to .125". Low profile head of .022" allows greater board-to-board clearance. Small head diameter allows centerline spacing of .100". Meets gold plating specifications of MIL-G-45204, Type II and tin plating specifications of MIL-T-10727, Type I.

Series	Hole Size for Hand Insertion	Hole Size for Automatic Insertion
1	.040 +.004	.042 ± .002
	-.000	
2	.052 +.004	.052 +.003
	-.000	
3	.063 +.004	.062 +.004
	-.000	
4	.072 +.004	.072 +.004
	-.000	
5	.103 +.004	.101 ± .003
	-.000	

Material: Spring, beryllium copper; eyelet, copper.

Pin Dia. Range (In.)	Finish		Part Numbers		
	Spring	Eyelet	Closed Bottom	Open Bottom	Knockout Bottom
<b>SERIES 1</b>					
.010-.013	Gold	Tin	5-330808-0	5-330808-4	5-330808-1
	Tin	Tin	2-330808-1	4-330808-1	3-330808-1
.013-.020	Gold	Tin	50935-1	50935-7	50935-4
	Tin	Tin	50935-2	50935-8	50935-5
.013-.020	Gold	Tin	4-330808-9	5-330808-6	5-330808-3
	Tin	Tin	2-330808-7	4-330808-7	3-330808-7
.018-.020	Gold	Tin	7-330808-4	6-330808-9	7-330808-1
	Tin	Tin	7-330808-5	6-330808-8	7-330808-2

Pin Dia. Range (In.)	Finish		Part Numbers		
	Spring	Eyelet	Closed Bottom	Open Bottom	Knockout Bottom
<b>SERIES 2</b>					
.018-.021	Gold	Tin	2-331272-3	3-331272-9	3-331272-1
	Tin	Tin	2-331272-1	2-331272-7	2-331272-9
.018-.025	Gold	Tin	50863-5	50863-1	50863-3
	Tin	Tin	50863-8	50863-6	50863-7
.022-.025	Gold	Tin	2-331272-7	4-331272-3	3-331272-5
	Tin	Tin	2-331272-5	4-331272-1	3-331272-3
.013-.026	Gold	Tin	50462-8	50462-2	50462-5
	Tin	Tin	50462-7	50462-1	50462-4
<b>SERIES 3</b>					
.022-.025	Gold	Tin	3-331677-7	2-331677-0	3-331677-6
	Tin	Tin	1-331677-6	1-331677-9	3-331677-5
.026-.029	Gold	Tin	3-331677-8	2-331677-4	3-331677-2
	Tin	Tin	1-331677-0	2-331677-5	3-331677-1
.026-.033	Gold	Tin	50864-1	50864-5	50864-3
	Tin	Tin	50864-6	50864-8	50864-7
.030-.033	Gold	Tin	1-331677-8	2-331677-2	3-331677-4
	Tin	Tin	1-331677-3	2-331677-1	3-331677-3
<b>SERIES 4</b>					
.030-.033	Gold	Tin	1-332070-9	2-332070-5	3-332070-1
	Tin	Tin	1-332070-8	2-332070-4	3-332070-0
.034-.037	Gold	Tin	2-332070-1	2-332070-7	3-332070-3
	Tin	Tin	2-332070-0	2-332070-6	3-332070-2
.034-.040	Gold	Tin	50865-5	50865-3	50865-1
	Tin	Tin	50865-8	50865-6	50865-7
.037-.040	Gold	Tin	2-332070-3	2-332070-9	3-332070-5
	Tin	Tin	2-332070-2	2-332070-8	3-332070-4
<b>SERIES 5</b>					
.042-.049	Gold	Tin	50871-5	50871-1	50871-3
	Tin	Tin	50871-8	50871-6	50871-7
.050-.057	Gold	Tin	1-50871-4	1-50871-0	1-50871-2
	Tin	Tin	1-50871-7	1-50871-5	.....
.056-.065	Gold	Tin	2-50871-3	1-50871-9	2-50871-1
	Tin	Tin	2-50871-6	2-50871-4	.....

## MINIATURE SPRING SOCKETS ON POLYESTER STRIP



Bullet nose design for high volume applications. Available with silicone seal. Two series cover a pin range of .012" to .049" dia. and board thickness of .031" to .125". Sockets are ovalized for board retention in high speed soldering operations. Sockets accept round, flat or rectangular leads. Bellmouth design allows easy plugability. Low clearance. Small head diameter allows centerline spacing of .100". Meets gold plating specifications of MIL-G-45204, Type II and tin plating specifications of MIL-T-10727, Type I. Strip sockets may be applied using pneumatic hand tools, automatic bench machines or numerically-controlled application equipment. Applications of 2,000 to 9,000 per hour are obtainable.

Pin Dia. Range (In.)	Finish		Polyester Strip Part Numbers	
	Spring	Eyelet	w/Sealant	w/o Sealant
<b>SERIES 1 (HOLE DIA. .042" ± .003"†)</b>				
.012-.018	Gold	Tin	645947-5*	645948-5*
	Tin	Tin	1-645947-5#	1-645948-5#
			645948-4*	645948-4*
			1-645947-4#	1-645948-4#

Pin Dia. Range (In.)	Finish		Polyester Strip Part Numbers	
	Spring	Eyelet	w/Sealant	w/o Sealant
<b>SERIES 1 (CONT'D.)</b>				
.012-.021	Gold	Tin	645949-2*	645950-2*
			1-645949-2#	1-645950-2#
	Tin	Tin	645949-1*	645950-1*
			1-645949-1#	1-645950-1#
.015-.021	Gold	Tin	645947-2*	645948-2*
			1-645947-2#	1-645948-2#
	Tin	Tin	645947-1*	1-645948-1*
			1-645947-1#	1-645948-1#
<b>SERIES 2 (HOLE DIA. .052" ± .003"§)</b>				
.020-.026	Gold	Tin	645953-2*	645954-2*
			1-645953-2#	1-645954-2#
	Tin	Tin	645953-1*	645954-1*
			1-645953-1#	1-645954-1#
.014-.026	Gold	Tin	645955-2*	645956-2*
			1-645955-2#	1-645956-2#
	Tin	Tin	645955-1*	645956-1*
			1-645955-1#	1-645956-1#
.014-.022	Gold	Tin	645953-5*	645954-5*
			1-645953-5#	1-645954-5#
	Tin	Tin	645953-4*	645954-4*
			1-645953-4#	1-645954-4#

\*50,000 per reel. †10,000 per reel. ‡.043" ± .002" (1.09 ± 0.05 mm) for loose piece hand insertion. §.053" ± .003" (1.35 ± 0.05 mm) for loose piece hand insertion.

For more information on Mini-Spring Sockets, consult the following AMP Literature: Catalog 84-763 "AMP DIP Sockets, Strip Receptacles and Miniature Spring Sockets; AMP Standard Products Catalog; AMP Engineering Guide.



### DUAL IN-LINE PACKAGE (DIP) SWITCHES

DIP switches feature .100" x .300" (2.54 x 7.62 mm) centerline and are ideally suited for a variety of programming functions. Switches mount directly to the PC board for easy soldering, or they can be mounted to the board in a variety of AMP DIP sockets; no hardware required. The fully enclosed design of AMP DIP switches, when sealed with plastisol or tape, protects the contact surfaces from contaminants.

- 7000 Series Premium switches are standard rocker-actuated, single-pole, single-throw DIP switches, designed for a maximum life of 7000 cycles per pole.
- 7100 Series Standard switches are single-pole, single-throw switches, recommended for programming applications where the number of cycles is limited to 2000 cycles per pole.

#### 7000 SERIES

Designed for a maximum cycle life—up to 7000 cycles per pole. Contacts are made of beryllium copper with .000030" (0.00076 mm) gold over .000050" (0.00127 mm) nickel plating in contact area, and legs plated to meet AMP Solderability Specification 109-11-5. Multi-pole switches are also available with lever-actuated rockers and in a variety of configurations. A low-profile version is available, and features recessed cams to prevent accidental change of rocker position, and are available with sealing tape to provide protection during soldering and cleaning processes.

#### 7000 SERIES

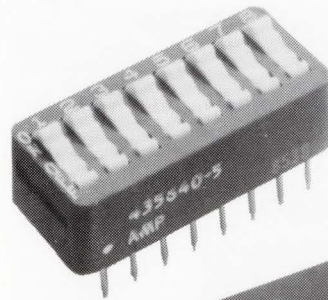
No. of Switch Positions	SPST Standard Profile Part Numbers	
	Unsealed*	Plastisol-Sealed*
2	2-435166-9	4-435166-7
3	3-435166-0	4-435166-8
4	435166-2	4-435166-9
5	435166-3	5-435166-0
6	435166-4	5-435166-1
7	435166-1	5-435166-2
8	435166-5	5-435166-3
9	435166-6	5-435166-4
10	435166-7	5-435166-5
11	3-435166-1	5-435166-6
12	3-435166-2	5-435166-7

\*All switches are bottom sealed.

#### 7000 SERIES SIDE-ACTUATED—UNSEALED\*

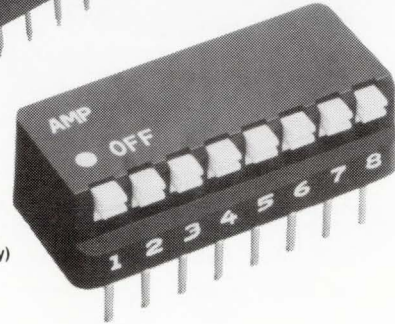
No. of Switch Positions	Part Number	No. of Switch Positions	Part Number
2	1-435802-0	8	435802-1
3	435802-2	9	435802-7
4	435802-3	10	435802-8
5	435802-4	11	1-435802-1
6	435802-5	12	1-435802-2
7	435802-6		

\*All switches are bottom sealed.



Standard Profile  
(7000 & 7100 Series)

Side Actuated  
(7000 Series Only)



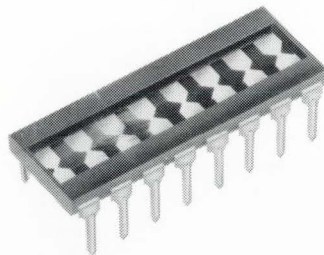
7100 SERIES

Single-pole, single-throw switches, recommended for programming applications where number of cycles is limited. Designed for life of 2000 cycles per pole. Contacts are copper alloy with .000030" (0.00076 mm) gold over nickel plating in contact area and legs plated to meet AMP Solderability Specification 109-11-5. Switches are also available with sealing tape to provide protection during soldering and cleaning processes. The multi-pole series provides for multiple operation with lever-actuated rockers.

No. of Switch Positions	SPST Standard Profile Part Numbers	
	Unsealed*	Plastisol-Sealed*
2	2-435640-9	3-435640-3
3	3-435640-0	3-435640-4
4	435640-2	3-435640-5
5	435640-3	3-435640-6
6	435640-4	3-435640-7
7	435640-1	3-435640-8
8	435640-5	3-435640-9
9	435640-6	4-435640-0
10	435640-7	4-435640-1
11	3-435640-1	4-435640-2
12	3-435640-2	4-435640-3

\*All switches are bottom sealed.

### 7600 SERIES DUAL IN-LINE PACKAGE (DIP) SHUNTS



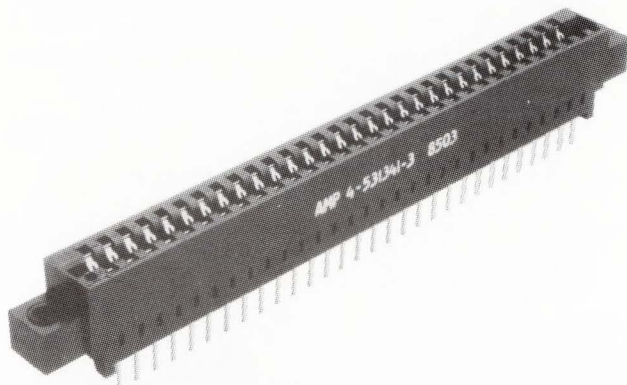
AMP DIP shunts are a highly reliable, low cost means of manually programming various types of electrical/electronic equipment. The shunt consists of a series of conductive straps, packaged in a DIP configuration. The straps can be retained intact for a closed circuit or broken with a hand tool to produce an open circuit. DIP shunts are available in 2 through 12 position configurations. All shunts can be supplied either unprogrammed or preprogrammed.

No. of Positions	Part Number	No. of Positions	Part Number
2	435704-2	8	435704-8
3	435704-3	9	435704-9
4	435704-4	10	1-435704-0
5	435704-5	11	1-435704-1
6	435704-6	12	1-435704-2
7	435704-7		

For more information on AMP Switches, consult the following AMP Literature: Catalog 86-777 "Printed Circuit Board Switches and Shunts"; AMP Standard Products Catalog; AMP Engineering Guide.



## STANDARD EDGE CONNECTORS



.100" CENTERLINE, SOLDER POSTS  
.200" ROW-TO-ROW SPACING—.125" POST LENGTH  
(WITHOUT MOUNTING EARS)

No. of Dual Positions	Part Number
22	530843-4
25	530843-5
30	530843-7
31	6-530843-5
36	530843-8
43	1-530843-0
50	1-530843-1

.125" CENTERLINE, SOLDER POSTS  
.250" ROW-TO-ROW SPACING—.125" POST LENGTH  
(WITHOUT MOUNTING EARS)

No. of Dual Positions	Part Number
6	530844-1
15	530844-3
22	530844-5
28	530844-6
30	530844-7
36	530844-8
50	1-530844-1

### FEATURES

- Maximum number of dual positions:
  - .100" (2.54 mm) centerline—70.
  - .125" (3.18 mm) centerline—60.
  - .156" (3.96 mm) centerline—44.
- Selective gold plating of contacts for high performance at low cost.
- .025" (0.64 mm) square, solid posts meet standard wrap-type specifications.
- .028" (0.71 mm) diameter, solid posts for flow solder applications.
- Recognized under the Components Program of Underwriters Laboratories Inc., Electrical File No. E28476.
- Glass-filled polyester housing is 94V-0 rated.
- Accepts double-sided PC boards, .054-.070" (1.27-1.78 mm) thick.

### Materials:

**Housings:** 94V-0 rated, glass-filled polyester, black.  
**Contacts:** Phosphor bronze, .000030" (0.00076 mm) gold plated.



INTERCONTACT KEYING PLUG  
(FOR EDGE CONNECTORS)

Part No. 530687-1  
Material: Natural color nylon.

## AMP LOW PROFILE EDGE CONNECTORS



- Tin plate for high solderability of solder eyelets and tabs.
- Individually replaceable contacts—no special tools required.
- Accepts .055-.070" (1.4-1.78 mm) thick printed circuit boards.
- Housings available with or without mounting ears.
- Interconnect and on-contact keying available.
- UL 94V-0 rated, glass-filled polyester housings.
- Variety of solder post lengths.
- 5 amp current rating per contact.

### Material:

**Housing:** Glass filled polyester, green.  
**Contacts:** Phosphor bronze, .000030" (0.00076 mm) gold plated in contact area, tin plated in solder area.

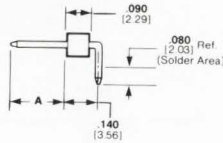
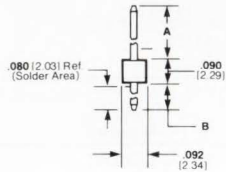
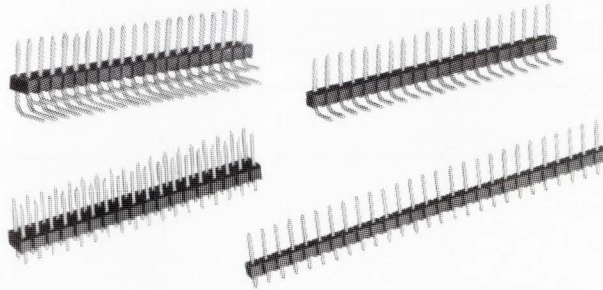
No. of Dual Positions	Part Numbers		
	Flow Solder Posts .156" Post Length		Solder Eyelet Contacts
	.200" Row-to-Row Spacing	.140" Row-to-Row Spacing	.235" Row-to-Row Spacing
10	2-530655-2	2-530657-2	2-530654-2
12	2-530655-3	2-530657-3	2-530654-3
15	2-530655-4	2-530657-4	2-530654-4
18	2-530655-5	2-530657-5	2-530654-5
22	2-530655-6	2-530657-6	2-530654-6
24	2-530655-7	2-530657-7	2-530654-7
28	3-530655-2	3-530657-2	3-530654-2
30	2-530655-9	3-530657-9	3-530654-9
36	3-530655-0	3-530657-0	3-530654-0
43	3-530655-3	3-530657-3	3-530654-3

### FEATURES

- Low profile housing, .460" (11.68 mm) deep.
- 6 through 44 dual positions on .156" (3.96 mm) centerline.
- Solder eyelet for wire-to-board or solder post for mother-daughter board application.
- Selective gold plating of contact area for high performance at low cost.
- Alternate platings, including tin, are available on request.
- Contacts bifurcated for redundancy.

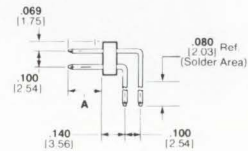
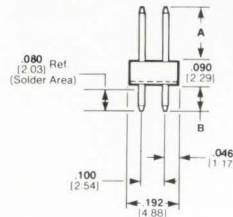
For more information on AMP Card Edge Connectors, consult the following AMP Literature: Catalog 74-253 "Standard Edge Connectors"; Data Sheet 75-336 "AMP Low Profile Edge Connectors; AMP Standard Products Catalog; AMP Engineering Guide.

## AMPMODU BREAKAWAY HEADERS



### FEATURES

- Headers may be purchased in full sticks or in desired sizes from your local distributor.
- Design and inventory versatility—headers can be broken into any size needed.
- Substantial time/labor savings—install all posts at one time.
- Vertical and right-angle versions available in single- or double-row configurations.
- Popular sizes: 1 thru 40 positions (single row); 2 thru 80 positions (double row).
- Copper alloy, drawn wire posts.
- Choice of round or square posts.
- Choice of gold duplex or bright tin plated posts.
- Post lengths include .230" (5.84 mm) and .318" (8.08 mm) for connector mating; .110" (2.79 mm), .120" (3.05 mm) and .125" (3.18 mm) for PC board soldering.
- Flame-retardant, black thermoplastic housings: 94V-0 rated.



### SINGLE ROW (.100 CENTERLINE)

Style	Post Tail A/B	Plating	Base Part Number	
			Square Post	Round Post
Straight	.318/.125	Tin†	103321	102943
		Duplex#	102972	102885
		Duplex§	102976	102884*
	.230/.120	Tin†	103327	103029
		Duplex#	103185	103021
		Duplex§	103239	103025
Right Angle	.318/.110	Tin†	103323	102945
		Duplex#	102974	102887
		Duplex§	102978	102846*
	.230/.120	Tin†	103329	103031
		Duplex#	103325	103023
		Duplex§	103148	103927

### DOUBLE ROW (.100 x .100 CENTERLINE)

Style	Post Tail A/B	Plating	Base Part Number	
			Square Post	Round Post
Straight	.318/.125	Tin†	103322	102944
		Duplex#	102973	102866
		Duplex§	102977	102845*
	.230/.120	Tin†	103328	103030
		Duplex#	103186	103022
		Duplex§	103240	103026
Right Angle	.318/.110	Tin†	103324	102946
		Duplex#	102975	102888
		Duplex§	102979	102847*
	.230/.120	Tin†	103330	103032
		Duplex#	103326	103024
		Duplex§	103149	103028

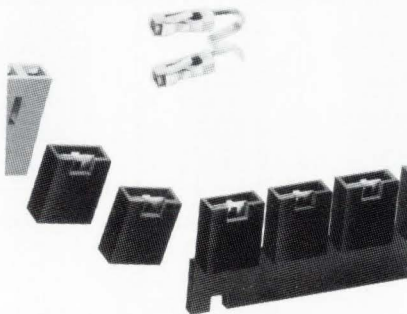
**ORDERING INFORMATION:** Number of positions for single row header equals prefix-suffix combination (example—8 position single row is XXXXXX-8; 15 position is 1-XXXXXX-5) except where denoted by \*—consult catalog 1-404587-0 for part number.

†.000100-.000200" bright tin over .000050" nickel.  
 #Duplex plated, .000015" gold on mating area; bright tin on solder area, with entire post underplated with .000050" nickel.  
 §Duplex plated, .000030" gold on mating area; bright tin on solder area, with entire post underplated with .000050" nickel.

**ORDERING INFORMATION:** Number of positions for double row header equals prefix-suffix combination X 2 (example—8 position double row is XXXXXX-4; 26 position is 1-XXXXXX-3) except where denoted by \*—consult Catalog 1-404587-0 for part number.

†.000100-.000200" bright tin over .000050" nickel.  
 #Duplex plated, .000015" gold on mating area; bright tin on solder area with entire post underplated with .000050" nickel.  
 §Duplex plated, .000030" gold on mating area; bright tin on solder area, with entire post underplated with .000050" nickel.

## AMP SHUNTS FOR USE WITH .100" CENTERLINE POST HEADERS



### LOW PROFILE SHUNTS

- Economical.
- Stands just .250" (6.36 mm) above PC board.
- Stackable on .100" (2.54 mm) centers.
- Packaged in strips of 10 for ease of handling.
- Accepts post as short as .200" (5.08 mm).

### MATERIALS:

**Housing:** 94V-0 rated glass-filled polyester, black.  
**Contacts:** Beryllium copper.  
**Finish:** .000030" (0.00076 mm) nickel with gold plate in contact area or tin overall.  
**.100 Centerline Shunts:**  
**Part No. 531220-1**—.000010" (0.00076 mm) tin plate.  
**Part No. 531220-2**—.000015" (0.00038 mm) gold plate.  
**Part No. 531220-3**—.000030" (0.00076 mm) gold plate.

### FEATURES

- One-piece contact construction.
- High normal forces.
- 94V-0 rated housings.
- Gold inlay, gold plate or tin plate over nickel.

### TANDEM SPRING SHUNTS

- .360 profile above PC board.
- Two points of contact provide extra reliability.
- Most shunts are stackable on .100" centers.
- 10 housing colors available.

### MATERIALS:

**Housing and Cover:** 94V-0 rated, glass-filled nylon, black.  
**Contacts:** Phosphor bronze.  
**Finish:** .000030" nickel with gold inlay in contact area or tin overall.  
**Part Number 3-530153-2**—.000015" (0.00038 mm) gold inlay.  
**Part Number 530153-2**—.000030" (0.00076 mm) gold inlay.  
**Part Number 1-530153-2**—.000050" (0.00127 mm) gold inlay.  
**Part No. 2-530153-2**—.000100" (0.00254 mm) tin plate.

For more information on AMPMODU Headers and Shunts, consult the following AMP Literature: Catalog 84-764 "AMPMODU Headers and Posts"; Catalog 1-404587-0 "AMPMODU Breakaway Headers"; AMP Standard Products Catalog; AMP Engineering Guide.



## AMPMODU LOW PROFILE SHROUDED HEADERS



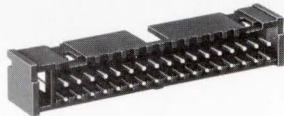
**FEATURES:**

- Available in .000015" and .000030" gold duplex plated posts.
- Flame retardant, black thermoplastic housings; 94V-0 rated.
- Vertical and right-angle versions available.
- Available in .025" square, four-sided, mateable, drawn wire posts.
- Wash out clearance for flux removal.
- Uses AMP-LATCH snap-in military polarization keys.

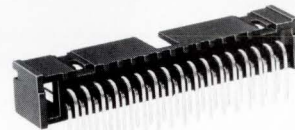
Number of Positions	Part Numbers			
	Straight Posts		Right Angle Posts	
	Duplex <sup>1</sup>	Duplex <sup>2</sup>	Duplex <sup>1</sup>	Duplex <sup>2</sup>
10	103308-1	103309-1	103310-1	103311-1
14	103308-2	103309-2	103310-2	103311-2
16	103308-3	103309-3	103310-3	103311-3
20	103308-5	103309-5	103310-5	103311-5
26	103308-6	103309-6	103310-6	103311-6
34	103308-7	103309-7	103310-7	103311-7
40	103308-8	103309-8	103310-8	103311-8
50	1-103308-0	1-103309-0	1-103310-0	1-103311-0
60	1-103308-2	1-103309-2	1-103310-2	1-103311-2

1—.000015" (0.00038 mm) gold on mating area; .000100-.000200" (0.00254-0.00508 mm) bright tin on solder area, with entire post underplated with .000050" (0.00127 mm) nickel.  
 2—.000030" (0.00076 mm) gold on mating area; .000100-.000200" (0.00254-0.00508 mm) bright tin on solder area, with entire post underplated with .000050" (0.00127 mm) nickel.

**Material and Finish:** Black thermoplastic, 94V-0 rated.  
**Contacts:** Copper Alloy.



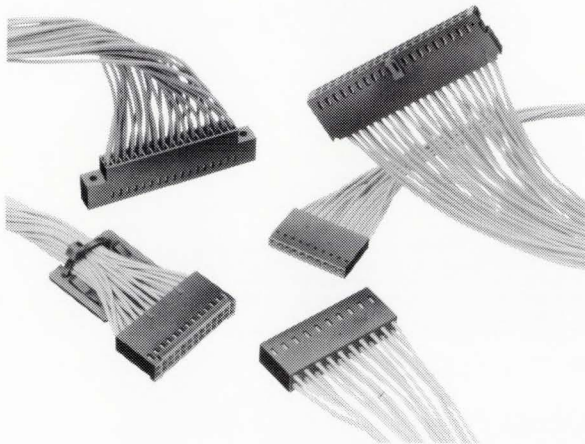
Straight Posts



Right-Angle Posts

For more information on AMP Shrouded Headers, consult the following AMP Literature: Catalog 84-764 "AMPMODU Headers and Posts"; AMP Standard Products Catalog; AMP Engineering Guide.

## AMPMODU Mod. IV, Mod. IV.v, Mod. V RECEPTACLE CONTACTS



### CONTACT FEATURES:

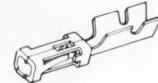
- Crimp, snap-in contacts are removable.
- Terminates 32 to 20 AWG discrete wire.
- Available in a variety of platings and contact pressures.
- Dual cantilever contact beam with built-in overstress assures reliable connection.

### HOUSING FEATURES:

- Capable of connecting up to 100 wires simultaneously.
- Available in single, double and triple row configurations in .100", .125" and .150" centerline spacing.
- Available options—detent latching, polarization, mounting ears and bonded strain relief/pull tabs.

### SPECIFICATIONS

Contact Current Rating: 3 amperes.  
Terminal Resistance: 12 milliohms max.  
Contact Material: Be-Cu.



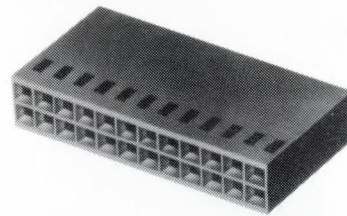
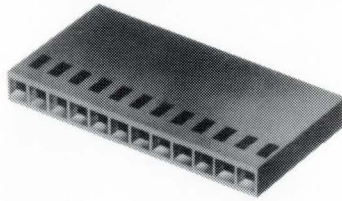
### WIRE CRIMP RECEPTACLE WITH INSULATION SUPPORT, SNAP-IN

Wire Size (AWG)	Insul. Dia. (Max.)	Plating	Part Numbers			
			Loose Piece Contacts			Hand Tool
			Standard Pressure	Intermediate Pressure	High Pressure	
26-22	.061	A	87667-3	.....	102128-2	90340-1 or
		B	87667-2	102548-6	102128-1	603546-1
24-20	.069	A	87016-3	87046-4	1-87309-3	90345-1 or
		B	87016-2	87046-3	1-87309-4	603546-1

A—.000100-.000200" bright tin over .000030" nickel.

B—.000030" gold in contact area, with gold flash over .000050" nickel on entire contact.

### Mod. IV CONTACT HOUSINGS—WIRE APPLIED



#### SINGLE ROW—WITHOUT STRAIN RELIEF\*

No. of Positions	Part Number	No. of Positions	Part Number
1	1-87499-1	12	2-87499-1
2	87499-3	13	2-87499-3
3	87499-5	14	2-87499-5
4	87499-7	15	2-87499-7
5	87499-9	16	2-87499-9
6	1-87499-1	17	3-87499-1
7	87499-1	18	3-87499-3
8	1-87499-3	19	3-87499-5
9	1-87499-5	20	3-87499-7
10	1-87499-7	36	6-87499-9
11	1-87499-9		

Note: Cavity identification, AMP, part number and date code stamped on housing where size permits.

\*Other sizes and styles available.

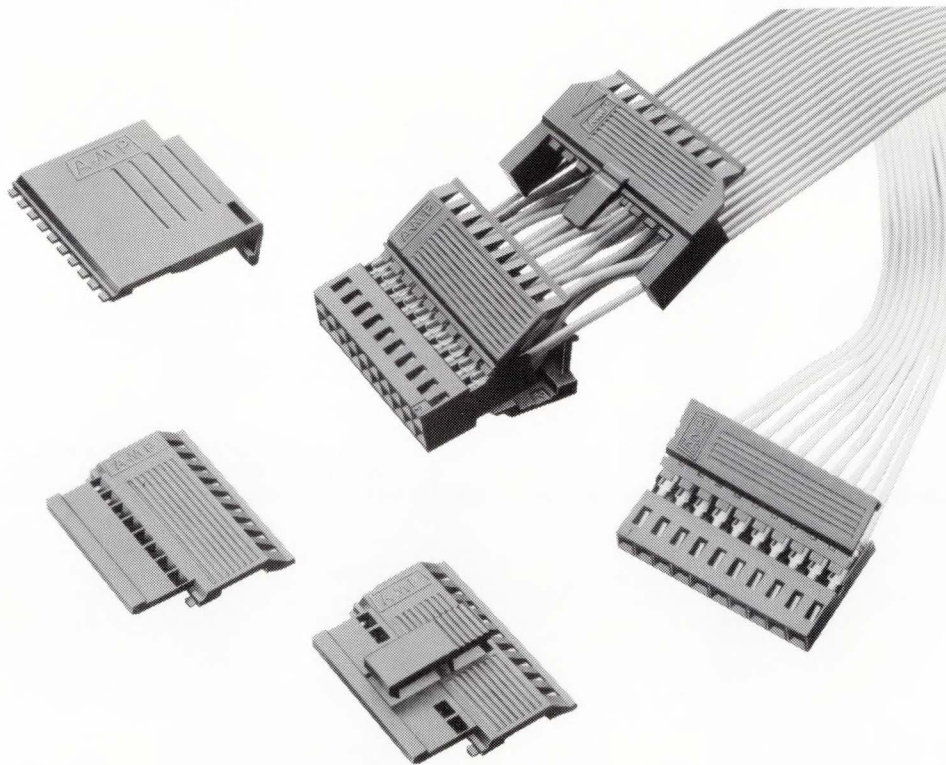
#### DOUBLE ROW—WITHOUT STRAIN RELIEF\*

No. of Positions	Part Numbers	
	Stamped	Unstamped
2	.....	5-87456-3
4	.....	4-87456-9
6	.....	87456-1
8	.....	87456-3
10	87456-6	.....
12	87456-8	.....
14	1-87456-0	.....
16	1-87456-2	.....
18	1-87456-4	.....
20	1-87456-6	.....
24	2-87456-0	.....
26	2-87456-2	.....
28	2-87456-4	.....
34	3-87456-0	.....
40	3-87456-6	.....
50	4-87456-0	.....
60	5-87456-2	.....

Note: Cavity identification, AMP, part number and code date stamped on housing and/or strain relief where size permits.

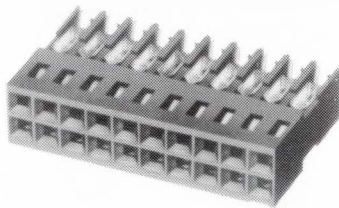
\*Housings with strain reliefs also available.





### FEATURES

- Full line of mass-termination tooling offers lowest installed cost for all production needs.
- Dual cantilever beams with anti-overstress features provide redundant contact to mating post and limit beam deflection, preventing permanent deformation.
- Redundant insulation displacement slots assure maximum reliability.
- Integral wire strain relief on contact prevents wire motion from being transmitted to wire termination areas.
- Built-in contact post stop.
- Insulation displacement contacts and crimp snap-in contacts are interchangeable.
- Complete serviceability with replacement contacts.
- Covers can accommodate multiple housings for ganged (end-to-end) stacking.
- Cover styles include low profile, polarized, non-polarized, eject and latching.



### DOUBLE ROW MT RECEPTACLE CONNECTORS .100" (2.54 mm) CENTERS

Housings Preloaded with Standard Pressure Contacts

Insulation Diameter: .050" (1.27 mm).  
Mating Post Length: .222-.273" (5.64-6.94 mm) max.  
Material and Finish:

Housing and Cover: Black thermoplastic, flame retardant.  
Contacts: Copper alloy.

### CONNECTOR ASSEMBLIES

No. of Positions*	Part Number	No. of Positions*	Part Number
6	102398-1	24	1-102398-0
8	102398-2	26	1-102398-1
10	102398-3	34	1-102398-5
12	102398-4	40	1-102398-8
14	102398-5	50	2-102398-3
16	102398-6	60	2-102398-8
18	102398-7	64	3-102398-0
20	102398-8		

### COVERS (2 PER CONNECTOR)

No. of Positions*	Part Number	No. of Positions*	Part Number
6	102396-1	40	1-102396-8
8	102396-2	42	1-102396-9
10	102396-3	44	2-102396-0
12	102396-4	46	2-102396-1
14	102396-5	48	2-102396-2
16	102396-6	50	2-102396-3
18	102396-7	52	2-102396-4
20	102396-8	54	2-102396-5
22	102396-9	56	2-102396-6
24	1-102396-0	58	2-102396-7
26	1-102396-1	60	2-102396-8
28	1-102396-2	62	2-102396-9
30	1-102396-3	64	3-102396-0
32	1-102396-4	66	3-102396-1
34	1-102396-5	68	3-102396-2
36	1-102396-6	70	3-102396-3
38	1-102396-7	72	3-102396-4

\*Other positions and styles available.

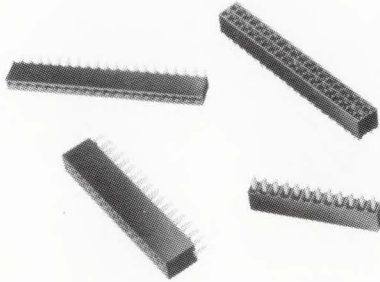


### KEYING PLUG

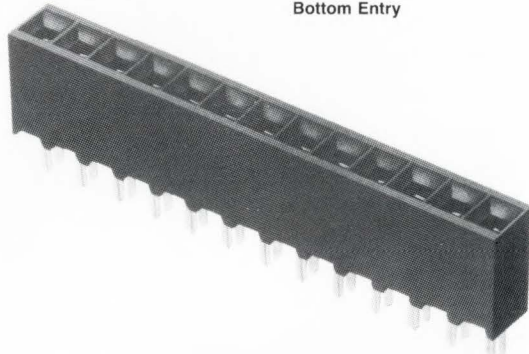
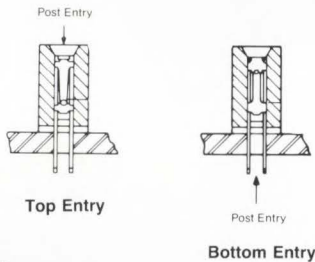
Part No. 86286-1  
Material: Natural color nylon. Plugs into receptacle contact.

For more information on AMPMODU MT Connectors, consult the following AMP Literature: Catalog 84-765 "AMPMODU Receptacles"; AMP Standard Products Catalog; AMP Engineering Guide.

## VERTICAL MOUNTED AMPMODU RECEPTACLE ASSEMBLIES



**MOD IV RECEPTACLE ASSEMBLIES  
BOARD MOUNTED, SINGLE ROW  
.100" (2.54 mm) CENTERS  
(MATE WITH .025" (0.64 mm) SQ. OR ROUND POSTS)**



No. of Pos.	Part Numbers	
	Top Entry	Bottom Entry
3	103176-1	103243-1
4	103176-2	103243-2
5	3-103176-8	103243-3
6	103176-3	103243-4
7	103176-4	103243-5
8	103176-5	103243-6
9	103176-6	103243-7
10	103176-7	103243-8
12	103176-9	1-103243-0
14	1-103176-1	1-103243-2
16	1-103176-3	1-103243-4
18	1-103176-5	1-103243-6
20	1-103176-7	1-103243-8
22	1-103176-9	2-103243-0
24	2-103176-1	2-103243-2
26	2-103176-3	2-103243-4
28	2-103176-5	2-103243-6
30	2-103176-7	2-103243-8
32	2-103176-9	3-103243-0
34	3-103176-1	3-103243-2
36	3-103176-3	3-103243-4
38	3-103176-5	3-103243-6
40	3-103176-7	3-103243-8

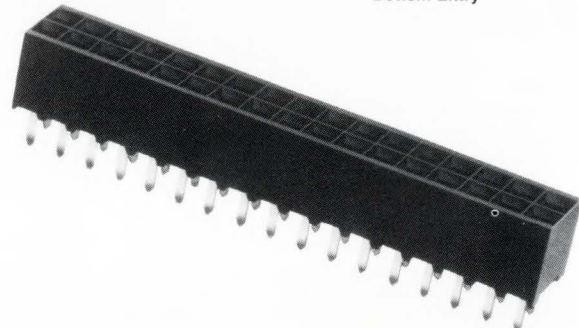
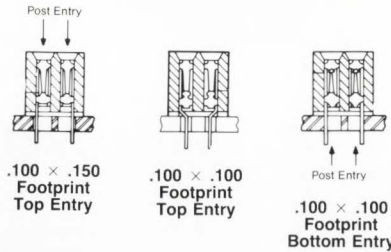
Note: Other sizes and styles available. Contact your local AMP distributor.

For more information on AMPMODU Receptacle Assemblies, consult the following AMP Literature: Catalog 84-765 "AMPMODU Receptacles for .025 Square and Round Posts"; AMP Standard Products Catalog; AMP Engineering Guide.

### FEATURES

- Contact design provides dual cantilever beams with a built-in anti-overstress feature.
- Available in several assembly height profiles.
- Available in .100" x .100" (2.54 x 2.54 mm), .150" x .150" (3.81 x 3.81 mm), .125" x .250" (3.18 x 6.35 mm) mating face centerline spacing.
- Available in .100" x .100" (2.54 x 2.54 mm), .100" x .150" (2.54 x 3.81 mm), and .150" x .200" (3.81 x 5.08 mm) footprints.
- Top and bottom entry styles.
- Single and double row configurations.
- Housings feature standoffs for cleaning under assembly.
- Housings are flame-retardant, black thermoplastic.
- Copper alloy contacts.
- Contacts are repairable and replaceable.
- Low profile assemblies are end-stackable.

**MOD. IV RECEPTACLE ASSEMBLIES  
BOARD MOUNTED, DOUBLE ROW  
(MATE WITH .025" (0.64 mm) SQ. OR ROUND POSTS)**

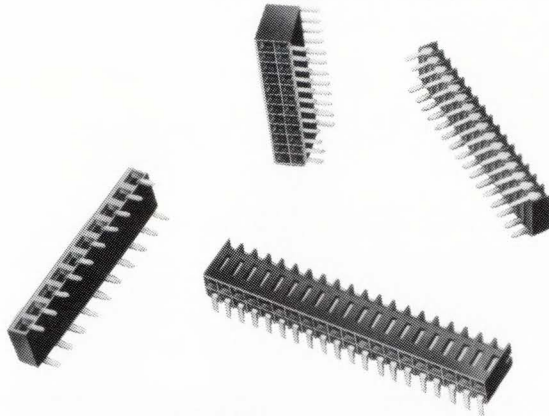


No. of Pos.	Part Numbers		
	.100 x .150 Footprint		.100 x .100 Footprint
	Top Entry	Top Entry	Bottom Entry
4	103183-2	533010-2	103251-2
6	103183-3	533010-3	103251-3
10	103183-4	533010-5	103251-5
14	103183-6	533010-7	103251-7
16	103183-7	533010-8	103251-8
20	103183-8	1-533010-0	1-103251-0
24	1-103183-0	1-533010-2	1-103251-2
26	1-103183-1	1-533010-3	1-103251-3
30	1-103183-3	1-533010-5	1-103251-5
34	1-103183-4	1-533010-7	1-103251-7
40	1-103183-6	2-533010-0	2-103251-0
50	1-103183-7	2-533010-5	2-103251-5
60	1-103183-8	3-533010-0	3-103251-0
64	3-103183-4	3-533010-2	3-103251-2

Note: Other sizes and styles available. Contact your local AMP distributor.



### HORIZONTAL MOUNTED AMPMODU RECEPTACLE ASSEMBLIES

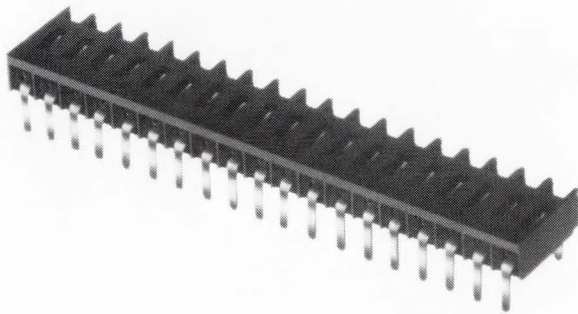


Horizontal mount, end-stackable, short point-of-contact with post stop and standoffs.

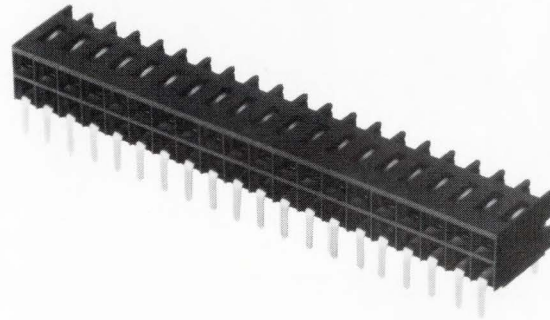
#### FEATURES

- Available in .100" x .100" and .150" x .150" mating face centerline spacing.
- Available in a variety of flame-retardant materials in various operating conditions.
- Available with up to 130 positions in .100" centerline and 86 positions in .150" centerline.
- Contacts are replaceable.
- Contacts are copper alloy, fully nickel underplated, and overplated with a variety of gold plating thicknesses, tin-lead or duplex plating.
- Nylon assemblies are end-stackable.
- .100" x .310" footprint; board hole dia. of .035" required.

**MOD. II RECEPTACLE ASSEMBLIES—  
BOARD MOUNTED, SINGLE ROW  
(MATE WITH .025" x .025" POSTS)**



**MOD. II RECEPTACLE ASSEMBLIES—  
BOARD MOUNTED, DOUBLE ROW  
(MATE WITH .025" x .025" POSTS)**



No. of Pos.	Part No.
5	6-103218-1
6	6-103218-0
7	5-103218-9
8	5-103218-8
9	5-103218-7
10	5-103218-6
11	5-103218-5
12	5-103218-4
13	5-103218-3
14	5-103218-2
15	5-103218-1
16	5-103218-0
17	4-103218-9
18	4-103218-8
19	4-103218-7
20	4-103218-6
40	2-103218-6
50	1-103218-6
60	103218-6

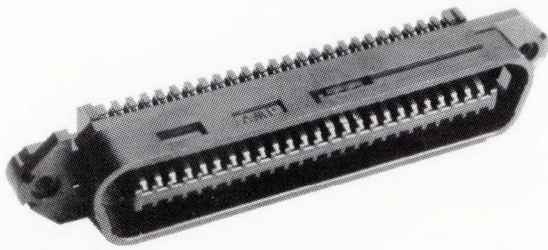
**Note:** Other sizes and styles available. Consult your local AMP distributor.

No. of Pos.	Part No.
12	6-103220-0
14	5-103220-9
16	5-103220-8
18	5-103220-7
20	5-103220-6
24	5-103220-4
26	5-103220-3
34	4-103220-9
40	4-103220-6
60	3-103220-6
80	2-103220-6
100	1-103220-6
130	103220-1

**Note:** Other sizes and styles available. Consult your local AMP distributor.

For more information on AMPMODU Receptacle assemblies, consult the following AMP Literature: Catalog 84-765 "AMPMODU Receptacles for .025 Square or Round Posts"; AMP Standard Products Catalog; AMP Engineering Guide.

## CHAMP CONNECTORS



### Materials:

**Connectors:** Self-extinguishing black thermoplastic.  
**Contacts:** Copper alloy—gold over nickel plating.

### Styles:

**PS**—Plug, Screw Lock.  
**PB**—Plug, Bail Lock.  
**RS**—Receptacle, Screw or Bail Lock.  
**RP**—Receptacle—Panel Mount, Screw or Bail Lock.

### FEATURES—IDC CHAMP CONNECTORS:

- Wide wire range
- Eliminates costly wire preparation
- Terminates unstripped solid or stranded (7 strand), multi-conductor cable, ribbon cable and laminated cable
- Contacts are reusable and replaceable
- Accommodates wire with most soft insulation types in diameters up to .045"
- Ideally suited for cable-to-cable and cable-to-panel connector applications

### FEATURES—ALL CHAMP PRODUCTS

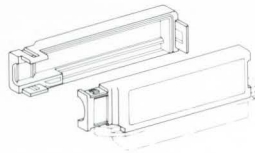
- Connectors fully intermateable and interchangeable with others of similar design
- Exceptionally stable performance under various environmental conditions.
- Self extinguishing thermoplastic housings and accessories
- Contacts on .085" centers, in dual-position arrangement
- Connectors available in 14, 24, 36, 50 and 64 positions with a choice of mounting methods—screw type, bail mount type or locking latch type
- Recognized under the Component Program of Underwriters Laboratories Inc., File No. E-28476

No. of Positions	Wire Size			Housing Color Dot Desig.	Contact Letter Desig.	Part Numbers			
	Solid		7-Strand			Plug		Receptacle	
	AWG	mm				AWG	Style PS	Style PB	Style RS
14	22	0.64	22	Green	C	552300-1	552316-1	552304-1	2-552321-1
24	22	0.64	22	Green	C	552301-1	552317-1	552305-1	2-552322-1
36	22	0.64	22	Green	C	552302-1	552318-1	552306-1	2-552323-1
50	22	0.64	22	Green	C	552173-1	552319-1	552064-1	2-552324-1
64	22	0.64	22	Green	C	552303-1	552320-1	552307-1	2-552325-1
14	24-26	0.64	24	Blue	B	552282-1	552270-1	552312-1	2-552271-1
24	24-26	0.64	24	Blue	B	552283-1	552272-1	552313-1	2-552273-1
36	24-26	0.64	24	Blue	B	552284-1	552273-1	552314-1	2-552275-1
50	24-26	0.64	24	Blue	B	229972-1	552032-1	229975-1	2-552001-1
64	24-26	0.64	24	Blue	B	552285-1	552276-1	552315-1	2-552288-1
14	.....	.....	26-27-28	Yellow	E	552442-1	552468-1	552463-1	2-552473-1
24	.....	.....	26-27-28	Yellow	E	552443-1	552469-1	552464-1	2-552474-1
36	.....	.....	26-27-28	Yellow	E	552444-1	552470-1	552465-1	2-552475-1
50	.....	.....	26-27-28	Yellow	E	552390-1	552471-1	552391-1	2-552476-1
64	.....	.....	26-27-28	Yellow	E	552488-1	552472-1	552489-1	2-552477-1

180° SNAP-ON STRAIN RELIEF COVER

90° SNAP-ON STRAIN RELIEF COVER

SNAP-ON STRAIN RELIEF



Note: Two required per connector assembly.

No. of Positions	Cable Dia. Range (In.)	Part Number
14	.175-.220	552079-1
	.220-.265	1-552079-1
	.265-.310	2-552079-1
24	.230-.280	552076-1
	.280-.320	1-552076-1
	.320-.380	2-552076-1
36	.290-.360	552073-1
	.360-.430	552073-5
	.480-.520	552073-6
50	.330-.380	3-552008-1
	.380-.430	2-552008-1
	.430-.490	552008-1
	.490-.550	4-552008-1
	.430-.500	552003-1*
64	.480-.540	552082-1

\*With probe holes.

No. of Positions	Cable Dia. Range (In.)	Part Number
14	.185-.230	552412-1
	.250-.300	1-552412-1
	.305-.360	2-552412-1
24	.250-.300	552413-1
	.305-.360	1-552413-1
36	.305-.360	552414-1
	.330-.380	3-552414-1
50	.340-.400	552014-1
	.315-.415	1-552011-1
	.415-.465	552011-1
64	.475-.540	552731-1
	.410-.475	552496-1
	.475-.540	1-552496-1
	.540-.605	2-552496-1

No. of Positions	Part Number
14	1-552299-1
24	1-552298-1
36	1-552297-1
50	1-552027-1
64	1-552296-1

### 50-POSITION CHAMP CABLE-TO-CABLE PLUG AND RECEPTACLE CONNECTOR KIT WITH TAPERED COVER

Wire Size			Housing Color Dot Desig.	Contact Letter Desig.	Cable Dia. Range (In.)	Kit Part Numbers	
Solid AWG	mm	7-Strand AWG				Plug & Cover Black	Receptacle & Cover Black
24	.051	.....	Red	A	.350-.425	229912-1	229913-1
24-26	.040	26, 27, 28	Blue	B	.350-.425	229976-1	229977-1
.....	.....	26, 27, 28	Yellow	E	.350-.425	552402-1	552403-1

### IEEE-488 CONNECTOR KITS

- 24 position interface bus connector
- Back-to-back configuration
- Includes cover and metric hardware
- For use with 26 AWG stranded cable
- Cable assemblies available

SHIELDED P/N 553576-1 ALL PLASTIC P/N 552661-1  
 Application Tooling—230506-2  
 (Includes Arbor Press and Die Set)

For more information on CHAMP Connectors, consult the following AMP Literature: Catalog 73-152 "CHAMP Connector System"; AMP Standard Products Catalog; AMP Engineering Guide.



## CHAMP HARDWARE



Hardware Kit	Positions	Application			
		Cable to Cable	Cable to Panel	Cable to Vertical PC Mount	Cable to Right Angle PC Mount
Screw Lock	.....	229911-1	552568-1 552568-2#	552563-1	229911-1 552631-1*
Bail Lock	.....	552561-3	552567-1 552567-3#	552562-1	552561-3
Bent Bail Lock	.....	552561-4	552567-2	552562-2	552561-4
CHAMP-LOK	36, 50 24, 14 64	552723-1 552723-2 552723-3	553359-1 553359-2 553359-3	553357-1 553357-2 553357-3	552723-1 552723-2 552723-3
		Front Panel Mount		Rear Panel Mount	
IEEE-488		552633-3		552633-4	

\*Rear panel mount only (.062" panel thickness).  
#For thick flange receptacle, panel mount connector.

## APPLICATION TOOLING

### PORTABLE HAND OPERATED TOOL (MI-1)

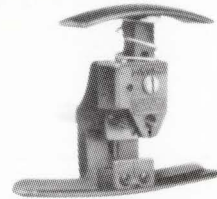


Lacing Fixture

The portable, hand-operated tool (MI-1) is designed for field applications and medium volume production, and is capable of terminating all connector positions except 64 position. If required, the standard tool may be converted to half-tap (daisy-chain) or multiple wire termination capability by simple conversion kits listed below. The half-tap and multiple wire tools may be ordered separately if required. The standard MI-1, multiple wire and half-tap versions all provide for 90° wire dress, but 180° as well as 90° wire dress may be obtained by removing the lacing combs and utilizing the lacing fixture pictured above (fixture must be ordered separately). Additional comb sets and lacing fixtures may be utilized to allow multiple wire dress operations to satisfy higher volume production requirements.

### TOOL PART NUMBERS

Description	Part Number
Standard Tool (90° Wire Dress)	229378-1
Half-Tap Tool (90° Wire Dress)	229378-3
Multiple Wire Tool (90° Wire Dress)	2-229378-0
Lacing Fixture (90° and 180° Wire Dress)	230328-1
Separate Comb Kit	230327-1
Multiple Wire Conversion Kit	230596-1



Part No. (See Table)

### PALM GRIP HAND TOOL (SI-1)

The Palm Grip Hand Tool (SI-1), with appropriate index slides, is recommended for field applications and low volume production. The tool applies to all CHAMP Connector sizes.

### INDEX SLIDE

For use with the Palm Grip Hand Tool (above) to assist in contact-to-tool alignment.



Part No. (See Table)



Part No. 229384-1

### T-HANDLE WIRE INSERTION TOOL

The T-Handle Wire Insertion Tool is designed for minor repair work on all CHAMP connectors. It does not have the capability of shearing the wire in the termination process.

### TERMINAL INSERTION/EXTRACTION TOOL

The Terminal Insertion Extraction Tool is designed to replace damaged contacts in the CHAMP plug and receptacle connectors.



Part No. (See Table)

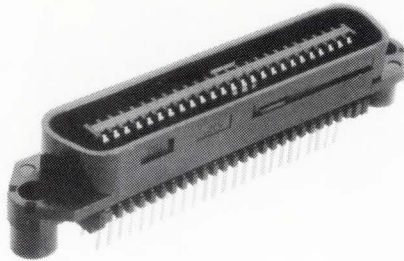
No. of Pos.	Palm Grip Tool Kit Part No.	Palm Grip Tool Part No.	Kit Consists of									
			Index Slides					Cable Clamp	Ratchet Release	Insertion/Extraction Tool	Tool Carrying Case	
			14 Position	24 Position	36 Position	50 Position	64 Position					
14	229451-3	229451-1	229706-1	.....	.....	.....	.....	.....	229622-1	229765-1	.....	.....
24	229451-4	229451-1	.....	229707-1	.....	.....	.....	.....	229622-1	229765-1	.....	.....
36	229451-5	229451-1	.....	.....	229708-1	.....	.....	.....	229622-1	229765-1	.....	.....
50	229451-2	229451-1	.....	.....	.....	229621-1	.....	.....	229622-1	229765-1	.....	.....
64	229451-6	229451-1	.....	.....	.....	.....	229709-1	.....	229622-1	229765-1	.....	.....
All	229764-1	.....	229706-1	229707-1	229708-1	229621-1	229709-1	229622-1	229765-1	230238-1	229710-1	229710-1
All	229764-2	229451-1	229706-1	229707-1	229708-1	229621-1	229709-1	229622-1	229765-1	230238-1	229710-1	229710-1

## PRINTED CIRCUIT BOARD MOUNT CHAMP CONNECTORS

### FEATURES:

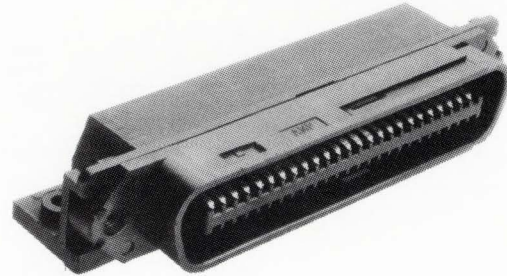
- Fully intermateable with others of similar design.
- Vertical and right-angle versions.
- All plastic, UL 94V-0 rated, self-extinguishing thermoplastic housings.
- .085" x .169" double-row footprint.
- Low profile—Vertical, .710"; Right-Angle, .620".
- Vertical connectors have built-in standoffs with .125" dia. holes.
- Right-angle connectors have threads built into interface hardware mounting holes.
- Accommodates PC board thicknesses from .062" to .125".

### VERTICAL MOUNT



Vertical Mount

### RIGHT-ANGLE MOUNT



Right Angle Mount

**Housing Material:** Glass-filled polyester, 94V-0 rated.  
**Note:** Order all required hardware separately.

No. of Positions	Part Numbers	
	Plug Style PV	Receptacle Style RV
14	552209-1	552212-1
24	552221-1	552224-1*
36	552232-1	552235-1
50	552116-1	552118-1
64	552243-1	552246-1

\*.189" dia. mounting hole.

### Materials:

**Housing, Bracket, Plate and Comb:** Black thermoplastic, 94V-0 rated.  
**Terminals:** Gold over nickel plated, high strength, copper alloy.

No. of Positions	Part Numbers			
	Standard Orientation		Reverse Orientation	
	Receptacle	Plug	Receptacle	Plug
24	552740-1	552741-1	552740-2	552741-2
	552791-1†	.....	552791-2†	.....
36	552742-1	552743-1	552742-2	552743-2
	552725-1	552726-1	552725-3	552726-3

†For IEEE-488 applications.

For more information on CHAMP Connectors, consult the following AMP Literature: Catalog 73-152 "CHAMP Connector System"; AMP Standard Products Catalog; AMP Engineering Guide.



## PRINTED CIRCUIT BOARD MODULAR JACK

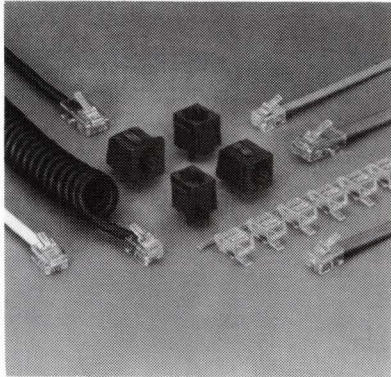
### MATERIAL AND FINISH

**Housing:** Black, flame-retardant polyester.  
**Contacts:** High-strength copper alloy, .014" (0.36 mm) thick, .000050" (0.0013 mm) selective gold plated on contact area.

### FEATURES:

- Meets or exceeds FCC rules and regulations and REA-PE-76

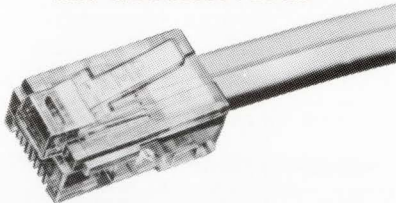
- Meets 1000 volt dielectric requirement
- Meets Telephone USOC requirements
- Designed for direct mounting on PC board
- Designed for ease of soldering and board cleaning
- Available in parallel flangeless and perpendicular mount housing versions
- 500 mating cycles durability
- UL listed, File E-81956



No. of Pos.	No. of Contacts	Part Numbers		USOC
		Jacks	Mates w/Plug	
<b>PARALLEL FLANGELESS MOUNT (SIDE ENTRY)</b>				
4	4	520249-2	641334	.....
6	4	520250-2	641335, 554710	RJ11C, RJ11W, RJ13C, RJ13W, RJ14C, RJ14W
6	6	520250-3	641337, 554710	RJ12C, RJ12W
8	6	520251-3	641337	.....
8	8	520251-4	641338	.....
8K	6	520252-3	641337, 554170, 554169, 554743, 554739	.....
8K	8	520252-4	641339, 554170, 554169, 554743, 554739	RJ14S, RJ45S
<b>PERPENDICULAR MOUNT</b>				
4	4	520257-2	641334	.....
6	4	520258-2	641335, 554710	RJ11C, RJ11W, RJ13C, RJ13W, RJ14C, RJ14W
6	6	520258-3	641337, 554710	RJ12C, RJ12W
8	6	520259-3	641337, 641338	.....
8	8	520259-4	641337	.....
8K	6	520260-3	641337, 554170, 554169, 554743, 554739	.....
8K	8	520260-4	641339, 554170, 554169, 554743, 554739	RJ14S, RJ45S

Note: For PC board layout and panel cutout, refer to AMP Application Specification 114-2048.

### AMP MODULAR PLUGS



### FEATURES:

- True mass termination of jacketed cables with tinsel or stranded conductors
- One-piece construction with pre-loaded contacts
- FCC and Telephone Industry Standard size and performance
- Semi-automatic termination capability
- UL Listed, File E-81956
- Dielectric Withstanding Voltage: 500 VAC
- Cable-to-Plug Tensile Strength: 20 lbs. min.
- Durability: 200 mating cycles

Description	Conductor Insulation Dia. (In.)	Cable O.D. (In.)	Key	No. of Pos.	Part Number 100/Box 100 Boxes/Carton
<b>ROUND CABLE PLUGS—28-26 AWG STRANDED WIRE</b>					
Line Cord	.035	.180	W/O	6	5-554710-3*
Plug	.039	.215	W	8	5-554170-3*
Plug	.039	.215	W/O	8	5-554169-3*
<b>FLAT OVAL CABLE PLUG—26-28 AWG STRANDED WIRE</b>					
Handset Plug	.035	.090 x .190	W/O	4	5-641334-3
Line Cord Plug	.035	.090 x .150	W/O	2	5-641333-3
	.035	.090 x .190	W/O	4	5-641335-3*
	.035	.090 x .260	W/O	6	5-641337-3*
	.039	.090 x .350	....	8	5-554743-3*
	.039	.090 x .350	....	8	5-554739-3*
<b>MODULAR PLUG—24-26 AWG SOLID WIRE</b>					
Line Cord Plug	.039	.200 Round	....	6	5-555042-3
Plug	.039	.090 x .345 Oval	....	8	5-554720-3

\*UL Listed, File 81956.

### APPLICATION TOOLING

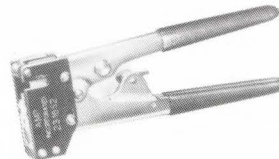
#### LIGHT DUTY HAND TOOL



For use with flat-oval cable plugs only. Strips and terminates cable. Light weight. Low cost.

Terminates	Hand Tool Part Number
2, 4 and 6 position Line Cord Plugs	231648-1
4 position Handset Plug	231649-1

#### HEAVY DUTY HAND TOOL



Cuts, crimps and terminates cable. CERTI-CRIMP ratchet feature assures proper termination. All plug sizes are accommodated.

Terminates	Complete Hand Tool Assembly Part Number
8 position Line Cord Plugs	231652-1
2, 4 and 6 position Line Cord Plugs	231652-2
4 position Handset Plugs	231652-3

For more information on this AMP Product line, consult the following AMP Literature: AMP Data Sheet 78-515 "AMP Modular Interconnection System", AMP Standard Products Catalog, and AMP Engineering Guide.



# BNC & TNC Connectors

## BNC SERIES DUAL CRIMP TYPE MIL-C-39012, CLASS II, CATEGORY B



- Low VSWR
- Low initial cost.
- Low applied cost—solderless crimp.
- Fully intermateable with comparable UG/U Series connectors.
- Bayonet lock coupling for quick connect/disconnect.
- Positive insulation grip with crimped braid ferrule.

RG/U Cable	Plug			Jack			Bulkhead Jack			Hand Tool
	Tarnish Resistant Finish	Silver Finish	MS 39012/ Desig.*	Tarnish Resistant Finish	Silver Finish	MS 39012/ Desig.*	Tarnish Resistant Finish	Silver Finish	MS 39012/ Desig.*	
58, 58A, 58B, 58C	225395-1	2-331350-1	16-0004	225396-1	2-331351-1	17-0004	225398-1	1-331693-1	19-0003	69478
59, 59, 59B, 62, 62A, 62B, Belden 8241, 8279	225395-2	331350	16-0008	225396-2	331351	17-0008	225398-2	331693	19-0007	69477
55, 55A, 55B, 223	225395-3	2-331350-7	16-0005	.....	.....	.....	225398-3	1-331693-6	19-0004	69478-1
174, 188	225395-7	2-331350-4	.....	225396-7	2-331351-4	.....	225398-7	1-331693-2	.....	220009-1
179, 187	225395-8	2-331350-5	.....	225396-8	2-331351-5	.....	225398-8	1-331693-3	.....	220009-1
180, 180A, 195	225395-9	2-331350-6	.....	225396-9	2-331351-6	.....	225398-9	1-331693-4	.....	69477-2
Amphenol 21-597, Belden 8218	1-225395-0	2-331350-2	.....	.....	.....	.....	1-225398-0	1-331693-0	.....	69477-2
Belden 8281, 9231	.....	4-331350-0	.....	.....	.....	.....	.....	.....	.....	220043-1

\*Government designation applies to silver plated parts only.

## COMMERCIAL BNC AND TNC DUAL CRIMP CONNECTORS



- Low cost.
- Smaller and lighter than standard BNC and TNC connectors.
- Fully crimpable.
- Captive center contact.
- BNC connectors are fully intermateable with all UG/U Series connectors
- Low VSWR.
- Tarnish resistant finish.

### BNC CONNECTORS

RG/U Cable	Plug Part Numbers			CERTI-CRIMP Hand Tool Part No.	Die Number For Commercial Hand Tool No. 220190-1
	Tin Plated Center Contact	Gold Plated Center Contact	Silver Plated Center Contact		
58, 58A, 58B, 58C, 141, 141A	227079-1	227079-5	227079-9	220187-1	220189-1
55, 55A, 55B, 223, 142, 142A, 142B	227079-2	227079-6	1-227079-0	220187-1	220189-1
59, 59A, 59B, 62, 62A, 62B	227079-3	227079-7	1-227079-1	220187-2	220189-2
71, 71A, 71B	227079-4	227079-8	1-227079-2	220187-2	220189-2
RG174, 188, 316	1-227079-4	1-227079-6	1-227079-5	220009-5	220210-1
RG179, 187	2-227079-0	2-227079-2	2-227079-1	220009-5	.....
Amphenol 21-597, Belden 8218, Essex 2003	1-227079-7	1-227079-9	1-227079-8	69477-4	.....
Belden 9248, 9114	3-227079-1	3-227079-0	3-227079-2	220247-1	220244-1
Belden 9266	.....	1-227079-3	.....	220187-2	220189-2

### TNC CONNECTORS

RG/U Cable	Plug Part Numbers			RG/U Cable	Plug Part Numbers		
	Center Contact Plating				Center Contact Plating		
	Tin	Gold	Silver		Tin	Gold	Silver
58, 58A, 58B, 58C, 141, 141A	227000-1	227000-5	.....	59, 59A, 59B, 62, 62A, 62B	227000-3	227000-7	1-227000-1

### 75 OHM BNC CABLE CONNECTORS

RG/U Cable	Plug	Right Angle Plug	Jack	Panel Jack	Bulkhead Jack	Die Set For Tool No. 220190-1
RG-59	221185-2	221402-2	221199-2	221203-2	221221-2	58085-1
Belden 8218	221185-3	221402-3	221199-3	221203-3	221221-3	58174-1
Belden 9248	221185-1	221402-1	221199-1	221203-1	221221-1	58086-1
Belden 8281, 9231	221185-5	.....	.....	.....	.....	220189-7
RG-59 Double Braid	221185-6	.....	.....	.....	.....	58086-1
RG-6, 6A	221185-7	.....	.....	.....	.....	220189-7

For more information on AMP RF connectors, consult the following AMP Literature: Catalog 80-570 "AMP Guide To RF Connectors"; Catalog 83-719 "BNC and TNC Connectors for Coaxial Cable"; AMP Standard Products Catalog; AMP Engineering Guide.



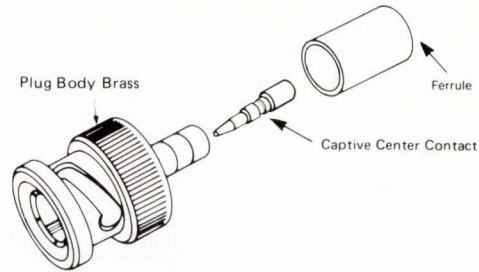
### HEX CRIMP BNC PLUGS



- Low cost.
- Smaller diameter and lighter weight—ideal for compact designs.
- Low VSWR—up to 4 GHz.
- Fully intermateable with all comparable UG/U connectors.
- Tarnish resistant finish for long life.
- Captive center contact.
- Uses industry standard crimp tooling.

**MATERIALS:**

**Body Components:** Brass.  
**Contact:** Brass, 70/30.  
**Insulators:** Polyethylene.  
**Crimp Ferrule:** Copper.  
**Gaskets:** Silicone rubber, ZZ-R-765.  
**Plating:**  
**Body:** Bright nickel (tarnish resistant).  
**Contact:** Gold, silver or tin.



Cable	Part Numbers			
	Gold Plated Center Contact	Silver Plated Center Contact	Tin Plated Center Contact*	Hand Tool
Belden 8218, RG 58, RG 58A, RG 58B, RG 58C	1-221128-0	1-221128-3	221128-7	607785-1
Belden 8279, 9209, RG 59, RG 59A, RG 59B, RG62, RG 62A, RG 62B	1-221128-1	1-221128-4	221128-8	607785-1
Belden 8281, 9141	1-221128-2	1-221128-5	221128-9	607895-1

\*Bulk packed only.

### COAXIAL CONNECTOR KIT

#### BNC STYLE CRIMP CONNECTOR KIT FOR RG 58 & RG 59/62 COAXIAL CABLE

**Part No. 607789-1**

**Description:**

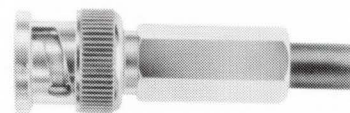
- Includes Male Plugs—5 RG 58 and 10 RG 59/62 sizes, assorted Adapters—2 jack-to-jack, 2 "T", 2 bulkhead jack-to-jack and 2 Isolated Ground Bulkhead jack-to-jack, plus Crimping Tool Part No. 607785-1.
- Additional empty box compartments allows user to customize contents to his particular needs.
- All products have nickel plated bodies, polypropylene or acetal dielectric and gold-plated contacts.



### TWIST-ON BNC AND TNC CONNECTORS

- For RG 59 solid center conductor coaxial cable.
- For use in minimal flexing applications.
- Connector body—Nickel plated brass.
- Contacts—Gold plated brass.
- Dielectric—Polypropylene or acetal material.

Connector	Part Number
BNC Plug	607583-1
BNC Jack	607783-1
TNC Plug	607584-1
TNC Jack	607585-1



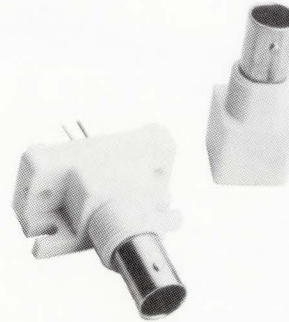
**BNC Plug**  
Part No. 607583-1



**TNC Plug**  
Part No. 607584-1

## COMMERCIAL PCB/PANEL MOUNT BNC JACKS

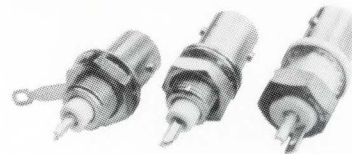
- Available in vertical and right-angle versions.
- Choice of mounting flanges and posts.
- Three contact platings offered.
- Plastic Valox® body allows PCB traces to pass underneath housing.
- Low profile (.520) right angle version available.
- Standard body color is white; black plastic or all-metal bodies also available.
- TNC connectors offered in similar configurations.



Style	Flanges	Mounting Posts	Mounting Height	Part Numbers		
				Tin Contact	Silver Contact	Gold Contact
Right Angle	No	No	.625	226990-1	226990-5	226990-3
Right Angle	No	Yes	.625	227161-1	227161-5	227161-3
Right Angle	Yes	No	.625	226978-1	226978-5	226978-3
Low Profile Right Angle	No	No	.520	.....	.....	227161-7
Vertical	No	No	1.375	226993-1	226993-5	226993-3
Vertical	No	Yes	1.375	227222-1	227222-5	227222-3
Vertical	Yes	No	1.375	226987-1	226987-5	226987-3

## COMMERCIAL BNC PANEL SOLDER JACKS

- Can be mounted in panel up to .250" thick.
- Solder terminal for grounding purposes.
- Fully intermateable with comparable UG/U Series connectors.
- Isolated receptacle has plastic threaded body and grounding tab.
- Sealed receptacle for pressurized applications.
- Insulating bushings available.



Style	Body Material*	Dielectric	Part Numbers		
			Tin Contact	Silver Contact	Gold Contact
W/O Solder Terminal	Zinc	Valox	227169-1	227169-2	227169-3
W/Solder Terminal	Zinc	Valox	227169-5	1-227169-2	227169-7
UG-1094 (W/O Solder Terminal)	Brass	Teflon®	228509-7	228509-8	228509-9
UG-1094 (W/Solder Terminal)	Brass	Teflon®	1-228509-0	1-228509-1	1-228509-2
Isolated Body	Zinc	Valox	227726-1	227726-2	227726-3
Sealed Body	Zinc	Valox	.....	.....	227476-1

\*All bodies are nickel plated.

## 50 OHM COAXIAL CONNECTOR ADAPTERS

Connector Type	Style	Description	Dielectric	Contact Plating	Part Number
BNC	Bulkhead adapter	Jack-jack	Polypropylene	Gold	228226-1
BNC	Bulkhead W/Ground isolation	Jack-jack	Acetal®	Gold	607774-1
BNC	In-line splice	Jack-jack	Acetal®	Gold	607409-2
BNC	Right angle	Plug-jack	Teflon®	Gold	329517
BNC	Tee Adapter	Jack-plug-jack	Acetal®	Gold	607771-1
BNC	Tee insulating cover	Short	Polypropylene	....	221586-1
BNC	Tee insulating cover	Long	Polypropylene	....	221586-2
BNC	Terminator	Plug	Teflon®	Gold	221629-4
TNC	Bulkhead adapter	Jack-jack	Acetal®	Gold	607581-3
TNC	In-line splice	Jack-jack	Acetal®	Gold	607580-3





# AMP OPTIMATE Fiber Optic Products

## FSMA CONNECTORS



FSMA-I Connector

FSMA-II Connector

AMP SMA style fiber optic connectors are industry compatible with 905 and 906 style connectors. FSMA-I (905) and FSMA-II (906) connectors terminate glass and plastic fiber sizes 125 thru 1000 microns, in cable-to-cable and machine interface connections. Used for patching or distribution in voice, data and video applications.

Connector Body Material	Fiber Size Dia. Nom. Jacket O.D. (Over Cladding) $\mu\text{m}$	Connector Kit Part Numbers			
		Nom. Jacket O.D. Less Than 3.0 (.118) w/o Strength Members	Nom. Jacket O.D. 3.0 (.118)* w/Strength Members	Nom. Jacket O.D. 3.8 (.150) w/Strength Members	Nom. Jacket O.D. 4.4 (.173) w/Strength Members
<b>FSMA-I CONNECTOR KITS (905 STYLE)</b>					
Nickel Plated Brass	125	501002-1	501003-1	501004-1	501005-1
	140	501002-2	501003-2	501004-2	501005-2
	230	501002-4	501003-4	501004-4	501005-4
	500	501002-8	501003-8	501004-8	501005-8
	1000	1-501102-1	1-501103-1	1-501104-1	1-501105-1
Aluminum	125	501106-1	501107-1	501108-1	501109-1
	140	501106-2	501107-2	501108-2	501109-2
	230	501106-4	501107-4	501108-4	501109-4
	500	501106-6	501107-6	501108-6	501109-6
	1000	501106-8	501107-8	501108-8	501109-8
<b>FSMA-II CONNECTOR KITS (906 STYLE)</b>					
Stainless Steel	125	501029-1	501030-1	501031-1	501032-1
	140	501029-2	501030-2	501031-2	501032-2
	230	501029-4	501030-4	501031-4	501032-4
	500	501029-6	501030-6	501031-6	501032-6
	1000	501029-8	501030-8	501031-8	501032-8
Aluminum	125	501035-1	501036-1	501037-1	501038-1
	140	501035-2	501036-2	501037-2	501038-2
	230	501035-4	501036-4	501037-4	501038-4
	500	501035-6	501036-6	501037-6	501038-6
	1000	501035-8	501036-8	501037-8	501038-8

Note: Kit includes eyelet, primary ferrule, body assembly, heat shrink tubing and protective cap.

\*Kit includes spacer tube.

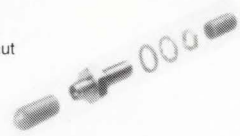
Dimensioning: Dimensions are in millimeters and inches. Values in parenthesis are inch equivalents.

### TOOLING FOR FSMA CONNECTOR KITS

Description	Nom. Jacket O.D., mm (Inch)			
	3.0 (.118) Without Strength Members	3.0 (.118) With Strength Members	3.8 (.150) With Strength Members	4.4 (.173) With Strength Members
Die Set for Hand Tool No. 58190-1	Not req'd.	312831-1	312831-2	312831-3

### COUPLING BUSHING, UNSEALED

Part No. 501049-1—Includes lock washer, jam nut and protective cap.



### COUPLING BUSHING, SEALED

Part No. 501050-1—Includes panel seal, lock washer, jam nut and protective cap.

## SIMPLEX CONNECTORS



Simplex Connectors terminate glass or plastic fiber sizes 125 thru 1000 microns for a low-cost, low-loss interconnect. These connectors are used in cable-to-cable and machine interface connections for patching or distribution of voice, data and video applications.

### KITS FOR GLASS FIBERS

Fiber Size Dia. (Over Cladding) $\mu\text{m}$	Kit Part Numbers			
	Cable O.D. (Over Jacket)			
	2.3 (.090)*	3.0 (.118)	3.8 (.150)	4.4 (.173)
125	501067-1	501067-2	501067-3	501067-4
140	501068-1	501068-2	501068-3	501068-4
230#	501070-1	501070-2	501070-3	501070-4

# Or plastic clad silica.

\*Kit includes spacer tube.

Note: Kits include heat shrink tubing, metal retainer assembly, ferrule, polishing bushing and protective cap.

Dimensioning: Dimensions are in millimeters and inches. Values in parenthesis are inch equivalents.

### KITS FOR PLASTIC FIBERS

Fiber Size Dia. (Over Cladding) $\mu\text{m}$	Kit Part Numbers Cable O.D. (Over Jacket) 2.2 (.087)*
250	501073-1
500	501074-1
1000	501076-1

\*Kit includes spacer tube.

Note: Kits include metal retainer assembly, ferrule, polishing bushing and protective cap.

### TOOLING FOR SIMPLEX CONNECTOR KITS

Description	Cable O.D. (Over Jacket)				Plastic Fibers 2.2 mm (.087")
	Glass Fibers				
	2.3 mm (.090")	3.0 mm (.118")	3.8 mm (.150")	4.4 mm (.173")	
Die Set for Hand Tool No. 58190-1	312831-1	312831-1	312831-2	312831-3	312831-1

PANEL MOUNT COUPLING BUSHING Part No. 501185-1



For more information on AMP Fiber Optic Products, consult the following AMP Literature: Catalog 83-178 "OPTIMATE Fiber Optic Interconnection Systems"; AMP Standard Products Catalog; AMP Engineering Guide.

### PIDG PRE-INSULATED TERMINALS, SPLICES & FASTON RECEPTACLES



- Color coded by wire size
- Copper sleeve provides secure insulation grip
- Abrasion, corrosion and vibration resistant
- Funnel ramp entry eases insertion
- Wire barrel serrations provide maximum contact and tensile strength after crimping
- Meets or exceeds MIL-T-7928, Type II, Class 1 and 2 requirements

### PLASTI-GRIP PRE-INSULATED TERMINALS, SPLICES & FASTON RECEPTACLES

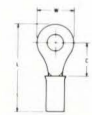


- Color coded by wire size
- Vinyl insulation provides good dielectric strength and secure support
- Corrosion resistant
- Funnel ramp wire entry speeds wire insertion
- Serrated wire barrel provides maximum contact and tensile strength

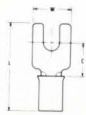
### SOLISTRAND UNINSULATED TERMINALS & SPLICES



- Corrosion resistant
- Bell mouth eases wire insertion
- Brazed seam for uniform barrel strength
- Dimples or serrations for optimum electrical contact and high tensile strength



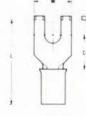
Ring



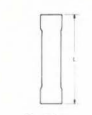
Spade



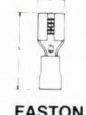
Spring Spade



Flanged Spade



Splice



FASTON Receptacle

Wire Size	Wire Insul.	Stud Size	Part Numbers					
			PIDG		PLASTI-GRIP		SOLISTRAND	
			Loose Piece	Tape Mounted	Loose Piece	Tape Mounted	Loose Piece	Tape Mounted

RING TERMINALS								
22-16	0.14	4	31880	2-31880-3	34141	2-34141-1	34104	.....
		6	31885	1-31885-2	34142	2-34142-1	34105	2-34105-2
		8	31890	2-31890-1	34145	2-34145-1	34111	2-34111-3
		10	31891	2-31891-2	34149	2-34149-1	34112	2-34112-2
		1/4	31894	2-31894-2	34150	2-34150-1	34113	2-34113-2
		5/16	31893	2-31893-4	34151	2-34151-1	34114	2-34114-2
		3/8	31896	2-31896-3	34152	.....	34115	2-34115-2
1/2	328948	.....	.....	.....	329966	.....	.....	
16-14	0.17	4	32441	2-32441-1	32956	2-32956-1	.....	.....
		6	31901	2-31901-1	34159	2-34159-1	34121	2-34121-1
		8	31902	2-31902-1	34160	2-34160-1	34122	2-34122-1
		10	31903	2-31903-2	34161	2-34161-1	34123	2-34123-1
		1/4	31906	1-31906-1	34162	2-34162-1	34124	2-34124-1
		5/16	31907	2-31907-2	34163	2-34163-1	34125	.....
		3/8	31908	.....	34164	.....	34126	.....
1/2	328949	.....	.....	.....	.....	.....		
12-10	0.25	4	35148	.....	.....	2-34835-1	.....	.....
		6	35149	2-35149-1	34168	2-34168-1	35476	2-35476-1
		8	35108	2-35108-1	34169	2-34169-1	32994	2-32994-1
		10	35109	2-35109-1	34170	2-34170-1	33457	2-33457-2
		1/4	35110	2-35110-1	34171	2-34171-1	33458	2-33458-3
		5/16	35111	2-35111-1	34172	2-34172-1	33459	2-33459-6
		3/8	35112	.....	34173	2-34173-1	33220	.....
1/2	35151	.....	34837	.....	35135	.....		

SPADE TERMINALS								
22-16	0.14	6	34541	2-34541-1	327735	2-327735-1	36195	2-36195-3
		8	32053	2-32053-1	34155	2-34155-1	34117	2-34117-2
		10	32054	2-43054-1	34156	2-34156-1	34118	2-34118-2
16-14	0.17	6	35559	2-35559-1	322994	2-322994-1	.....	.....
		8	321233	2-321233-1	34166	.....	.....	.....
		10	32060	2-32060-1	34167	2-34167-1	.....	.....
12-10	0.23	6	322985	.....	.....	.....	322451	.....
		8	32588	2-32588-1	34175	.....	32995	2-32995-1
		10	32589	2-32589-1	34176	2-34176-1	33479	2-33479-1

FLANGED SPADE TERMINALS								
22-16	0.14	6	32561	2-32561-1	322249	.....	320749	2-320749-2
		8	32498	2-32498-1	324169	2-324169-1	323124	.....
		10	.....	.....	328516	.....	.....	.....
16-14	0.17	6	320861	2-320861-1	324165	2-324165-1	320855	2-320855-1
		8	320862	2-320862-1	.....	.....	320856	2-320856-1
		10	320863	2-320863-1	.....	.....	320857	2-320857-1
12-10	0.23	6	324587	.....	324581	1-324581-1	.....	.....
		8	32501	2-32501-1	324172	1-324172-0	.....	.....
		10	324015	.....	.....	.....	.....	.....

SPRING SPADE TERMINALS								
22-16	.014	6	52929	52929-1	52949	52949-1	53120-1	53120-2
		8	52930	52930-1	52950	52950-1	.....	.....
		10	52931	52931-1	52951	52951-1	.....	.....
16-14	0.17	6	52935	52935-1	52955	52955-1	53123-1	53123-2
		8	52936	52936-1	52956	52956-1	53124-1	.....
		10	52937	52937-1	52957	52957-1	53125-1	53125-2
12-10	0.23	6	52941	52941-1	52961	52961-1	53126-1	.....
		8	52942	52942-1	52962	52962-1	53127-1	.....
		10	52943	52943-1	.....	52963-1	53128-1	53128-2

FASTON RECEPTACLES—.250 SERIES (.032 TAB)								
22-18	0.14	.....	640903-1	640903-2	640933-1	640933-2	.....	.....
16-14	0.17	.....	640905-1	640905-2	640935-1	640935-2	.....	.....
12-10	0.25	.....	640907-1	640907-2	350563-1	350563-2	.....	.....

BUTT SPLICES								
22-16	.....	.....	320559	2-320559-1	34070	1-34070-1	31818	.....
16-14	.....	.....	320562	2-320562-3	34071	2-34071-1	31819	.....
12-10	.....	.....	320570	2-320570-1	34072	.....	32151	.....

**TOOLING**  
Hand tools for PIDG and PLASTI-GRIP Terminals, Butt Splices and FASTON Receptacles, 22-10 AWG. CERTI-LOK Tool No. 169400 with Die Set No. 169704 or TETRA-CRIMP Tool No. 59824-1.  
Hand Tools for SOLISTRAND Terminals and Splices—22-10 AWG: Tool No. 49835; 607451-1.  
Specifications subject to change.

For more information on AMP Terminals and Splices, consult the following AMP Literature: Catalog 75-338 "AMP Standard Terminals and Splices"; AMP Standard Products Catalog; AMP Engineering Guide.

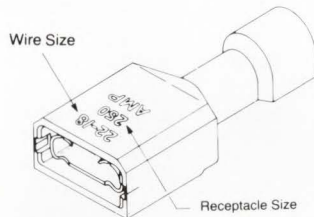


## ULTRA-FAST FULLY INSULATED FASTON RECEPTACLES

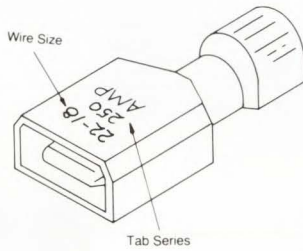
### FEATURES:

- Fully insulated.
- Prevents shock and short hazards.
- Insures correct lead-in of tab.
- Terminals color coded by wire size—Violet (26-22 AWG), Red (22-18 AWG), Blue (16-14 AWG)
- Terminal markings indicate wire and tab size.
- Terminates 26 thru 14 AWG stranded wire.
- Available in strip form for semi-automatic and automatic termination equipment.

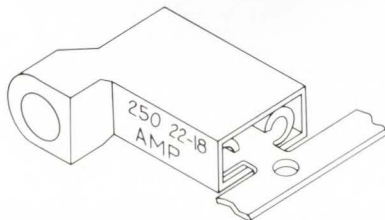
These fully-insulated terminals, available in straight, right-angle flag, and tab configurations, are the most cost-effective way to meet safety hazard requirements. A one-step operation gets rid of costly post-insulation problems. The result is compatible with the safety requirements of Underwriters Laboratories, Inc. Standards 1410, 478 and 560.



Ultra-Fast Fully Insulated FASTON Receptacle



Ultra-Fast Fully Insulated FASTON Tab



Ultra-Fast Fully Insulated FASTON Flag Receptacle

Wire Size†	Insul. Dia. Max. (In.)	Mating Tab Size (In.)	Terminal Material	Part Number	Hand Tool	Die Set for Hand Tool 58078-3
<b>.110 SERIES</b>						
26-22	.110	.020 × .110	Brass	7-520366-2*	.....	58052-3*
22-18	.120	.016 × .110	Brass	2-520081-2*	607882-1	90390-3*
		.020 × .110	Brass	2-520084-2		
		.020 × .110	Phosphor bronze	2-520138-2		
	.230	.016 × .110	Brass	2-520309-2*		
		.020 × .110	Brass	2-520307-2		
		.032 × .110	Brass	2-520311-2		
16-14	.260	.020 × .110	Brass	3-520371-2*		90341-3*
		.032 × .110	Brass	2-520373-2*		
<b>.187 SERIES</b>						
22-18	.135	.020 × .187	Brass	2-520182-2	607882-1	90390-3*
		.032 × .187	Phosphor bronze	2-520182-4		
		.020 × .187	Brass	2-520194-2		
	.230	.020 × .187	Phosphor bronze	2-520194-4		
		.032 × .187	Brass	2-520262-4		
		.032 × .187	Brass	2-520275-2		
16-14	.160	.020 × .198	Brass	3-350816-2		90391-3*
		.032 × .187	Brass	3-520125-2		
	.260	.020 × .187	Brass	3-520151-2		
		.032 × .187	Brass	3-520277-2		
<b>.250 SERIES</b>						
22-18	.135	.032 × .250	Brass	2-520184-2	607882-1	90390-3*
		.032 × .250	Phosphor bronze	2-520184-4		
		.032 × .250	Brass	2-520264-2		
	.230	.032 × .250	Phosphor bronze	2-520264-4		
		.032 × .250	Brass	3-350820-2		90391-3*
		.032 × .250	Phosphor bronze	3-520117-2		
16-14	.260	.032 × .250	Brass	3-520141-2		
		.032 × .250	Phosphor bronze	3-520141-4		

\*Special UL/CSA status. †Stranded wire only.

## ULTRA-FAST FULLY INSULATED FASTON TABS

Wire Size†	Insul. Dia. Max. (In.)	Mating Recept. Size (In.)	Terminal Material	Part Number	Hand Tool	Die Set for Hand Tool 38078-3
<b>.250 SERIES</b>						
22-18	.135	.032 × .250	Brass	2-520103-2	607882-1	90390-3*
16-14	.135	.032 × .250	Brass	2-520107-2		

†Stranded wire only.

## ULTRA-FAST FULLY INSULATED FASTON FLAG TERMINALS

Wire Size†	Insul. Dia. Max. (In.)	Mating Recept. Size (In.)	Terminal Material	Part Number	Hand Tool	Die Set for Hand Tool 58078-3
<b>.187 SERIES</b>						
22-18	.165	.020 × .187	Brass	2-520335-2	.....	90390-3*
			Brass	2-520337-2		
16-14	.185	.020 × .187	Brass	3-520339-2		90391-3*
			Brass	3-520341-2		
<b>.250 SERIES</b>						
22-18	.135	.032 × .250	Brass	2-520129-1	.....	90390-3*
16-14	.185	.032 × .250	Phosphor bronze	2-520129-4		90391-3*
			Brass	3-520133-2		

†Stranded wire only. \*Die Set only—Hand Tool 58078-3 must be ordered separately. AMP and FASTON are Trademarks of AMP Incorporated.



# Heat Shrinkable Tubing & Cable Ties

## AMPSULATION THIN WALL HEAT SHRINKABLE TUBING TYPE FP-1

### FEATURES AND BENEFITS

- Cross linked, thermally stabilized material
- Operating Temperature of -67° F to +275° F (-55° C to +135° C)
- 125° C and 600 volts rating
- Fungus resistant
- Can be applied with commercially available heat sources
- Meets or exceeds requirements of UL Standard 224
- Meets or exceeds requirements of MIL-I-23053/5 Class 1 and 2
- Shrink Ratio: 2.5:1
- Available in a variety of NEMA colors

AMPSULATION Thin Wall Heat Shrinkable Tubing can be used to:

- Insulate
- Provide strain relief
- Provide environmental protection
- Repair and splice wire and cable
- Bundle discrete wire and cable
- Mark and color code wire and cable

Expanded Size (in.)	Reel Length (ft.)	Bulk Part Nos.	Tubing Part Nos., 4 ft. ± 1/2" Length Marked Tubing
3/64	1000	603321-2	603321-1
1/16	1000	603322-2	603322-1
3/32	1000	603323-2	603323-1
1/8	1000	603324-2	603324-1
3/16	1000	603325-2	603325-1
1/4	500	603326-2	603326-1
3/8	200	603327-2	603327-1
1/2	200	603328-2	603328-1
3/4	200	603329-2	603329-1
1	100	603330-2	603330-1
1 1/2	100	603331-2	603331-1
2	100	603332-2	603332-1
3	50	603333-2	603333-1
4	50	603334-2	603334-1

Note: Tubing Color is black; other colors available upon request.

## AMPSULATION DUAL WALL HEAT SHRINKABLE TUBING (ENCAPSULATING ADHESIVE POLYOLEFIN)

A radiation cross linked, heat shrinkable, polyolefin material that is rated for continuous operation at 125° C. As Dual Wall shrinks, the inner adhesive liner melts and flows to seal and encapsulate components or splices contained within. Flame retardant and conforms to UL requirements. The adhesive bond develops excellent peel strength depending upon substrate material composition. Shrink Ratio: 3:1.

Expanded Diameter (In.)	Length (Ins.)	Part Number
1/8	12	603316-2
1/8	48	603316-4
3/16	12	603312-2
3/16	48	603312-4
1/4	12	603313-2
1/4	48	603313-4
3/8	12	603314-2
3/8	48	603314-4
1/2	12	603315-2
1/2	48	603315-4
3/4	12	603317-2
3/4	48	603317-4
1	12	603318-2
1	48	603318-4

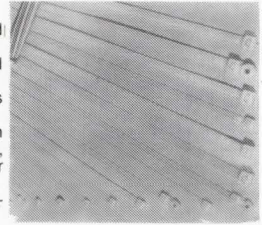
### FLAMELESS HEAT GUN Part No. 600655-1



## AMP-TY NYLON CABLE TIES

### FEATURES AND BENEFITS

- Self-locking application by hand tool provides application versatility.
- Interior serrations help hold individual wires and cables in place.
- Tensile strength of locking pawl meets MIL-S-23109 requirements.
- Tough, smooth nylon may be used in indoor or outdoor applications; black, UV-resistant ties are recommended for outdoor use.
- Meet or exceed MIL-S-23109 and MIL-STD-MS-3367, as indicated.



Lgth. (Ins.)	Stud Size	Bundle Dia. (Ins.)		Min. Tensile Strength (lbs.)	MIL STD	Part Numbers*	
		Min.	Max.			Natural	Black
REGULAR TIES							
4 1/2	.....	1/16	3/4	18	MS3367-4	1-604771-9	1-604771-0
5 13/16	.....	1/16	1 1/4	30	MS3367	1-603227-9	.....
7 1/2	.....	1/16	2	30	.....	1-604750-9	1-604750-0
8	.....	1/16	2	50	MS3367-1	1-604772-9	1-604772-0
8 1/2	.....	1/4	2	120#	.....	1-603225-9	.....
10 3/4	.....	1/16	2 3/4	60	.....	1-604751-9	1-604751-0
15 5/16	.....	1/16	4 1/2	50	MS3367-2	1-604774-9	1-604774-0
15 1/16	.....	3/16	4 1/2	120#	MS3367-3	1-604773-9	1-604773-0
21 1/4	.....	1/4	5 7/8	120	.....	1-603222-9	.....
21 5/8	.....	1/4	6	250#	.....	1-603221-9	.....
24	.....	1/8	7 9/16	80	.....	1-603224-9	.....
36	.....	1/8	11 1/8	80	.....	1-603223-9	.....
DOUBLE-HEADED TIE							
11 1/16	.....	.....	.....	60	.....	1-603228-9	.....
RELEASEABLE TIE							
21 1/4	.....	1/4	5 7/8	120	.....	1-603229-9	.....
SCREW MOUNTED TIES							
4 29/64	#4	1/16	3/4	18	.....	1-603231-9	.....
11 1/4	#10	1/16	3	50	.....	1-604752-9	1-604752-0
16	#10	1/16	3	50	MS3833	1-603232-9	.....
21 7/8	1/4	1/4	6	120	.....	1-603233-9	.....
FLAG HEAD TIE							
4 27/64	.....	1/16	3/4	18	.....	1-603230-9	.....

\*Quantity, 100 per poly bag. #Heavy duty.

## AMP WIRE MARKER CASSETTE AND REFILL SYSTEM



### FEATURES AND BENEFITS

- Easy to open and dispense markers.
- Multiple cutting blades.
- Cassette holds 20 characters.
- Unique design.
- Simple reloading.
- Vinyl tape.
- Excellent heat, freezing, humidity range.
- Bold numbers.

Description	Part Number
AMP Wire Marker Cassette—Numbers 0-19	607711-1
Refill Numbers 0-9 (2 tubes)	607712-1
Refill Numbers 10-19 (2 tubes)	607713-1
Refill Letters A-J (2 tubes)	607846-1
Refill Letters K-T (2 tubes)	607907-1
Refill Letters V-Z, plus, minus, diagonal, ground (2 tubes)	607908-1

For more information on these AMP products, consult the following AMP Literature: Bulletin 404848-2 "AMPSULATION Thin Wall Heat Shrinkable Tubing"; Bulletin 2-404848-9 "AMP-TY Nylon Cable Ties".





### FEATURES

All assemblies meet or exceed most industry specifications.

Uses AMP high quality components and accessories.

Shielded assemblies meet or exceed F.C.C. Docket 20780.

Assemblies available in many different connector styles, sizes, and lengths.

Data cables available for all popular connectors and interfaces.

All assemblies are 100% tested at the factory.

Description	Connector Shielding	Part Numbers	
		Length	
		6 ft.	10 ft.
IBM PC/XT to H.P. Plotter (7470) Subminiature D Connectors— 25 Pos Plug to 25 Pos Receptacle	Non-Shielded	607828-1	607828-2
	Shielded	607829-1	607829-2
IBM PC/XT to Parallel Printer Subminiature D to Centronics Type 25 Pos Plug to 36 Pos Plug	Non-Shielded	607810-1	607810-2
	Shielded	607811-1	607811-2
IBM PC/XT to Hayes Modem Subminiature D. Connectors 25 Pos Plug to 25 Receptacle	Non-Shielded	607812-1	607812-2
	Shielded	607813-1	607813-2
IBM PC/AT to Adaptor Cable Subminiature D Connectors— 9 pos. Receptacle to 25 pos. Plug	Non-Shielded	607814-1	607814-2
	Shielded	607815-1	607815-2
Interconnection Cable Centronics Type— 36 pos. Plug to 36 pos. Plug All Contacts Interconnected	Non-Shielded	607820-1	607820-2
	Shielded	607821-1	607821-2
Interconnection Cable Centronics Type— 36 pos. Plug to 36 pos. Receptacle All Contacts Interconnected	Non-Shielded	607826-1	607826-2
	Shielded	607827-1	607827-2
Interconnection Cable Subminiature D Connectors—25 pos. Plug to 25 pos. Plug All Contacts Interconnected	Non-Shielded	607816-1	607816-2
	Shielded	607817-1	607817-2
Interconnection Cable Subminiature D Connectors— 25 pos. Plug to 25 pos. Receptacle All Contacts Interconnected	Non-Shielded	607818-1	607818-2
	Shielded	607819-1	607819-2
Interconnection Cable Subminiature D Connectors— 25 pos. Plug to 25 pos. Plug Contacts 1-8 and 20 Interconnected	Non-Shielded	607822-1	607822-2
	Shielded	607823-1	607823-2
Interconnection Cable Subminiature D Connectors— 25 pos. Plug to 25 pos. Receptacle Contacts 1-8 and 20 Interconnected	Non-Shielded	607824-1	607824-2
	Shielded	607825-1	607825-2

**Note:** Cable used with the non-shielded connectors has a foil wrapped shield with a drain wire. Cable used with the shielded connectors is double shielded-foil wrapped plus a copper braid.

Additional cable lengths, pin configurations and other types of cable assemblies available upon request.

# Product Numerical Index

**Note:** The numerical index lists all cataloged parts by base (series) number only. Complete part numbers (with prefixes and/or suffixes) are shown on the pages indicated.

31818 to 821575

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31885	46	35135	46	88216	5	200532	18
31890	46	35148	46	88219	5	200807	19
31891	46	35149	46	91233	4	200821	12,15
31893	46	35151	46	102128	34	200833	19
31894	46	35476	46	102154	3	200835	19
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31901	46	36195	46	102185	3	200868	19
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