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The following is a list of technical documents covering the application, performance and maintenance of Subminiature D Connectors and related tooling.

Product Specifications describe technical performance characteristics and verification tests. They are intended for the Design, Component and Quality Engineer.

Cable Connectors—Pages 5 thru 77

- 108-40011—Connector, AMPLIMITE HDE-20
- 108-40030—AMPLIMITE HDE-20 Shielding Hardware
- 108-40012—Connector, AMPLIMITE HDF-20 (Low Profile)
- 108-46002—SHIELDED HDF-20 Low Profile Connectors
- 108-40005—Connector, AMPLIMITE HDP-20
- 108-40030—AMPLIMITE Shielding Hardware, HDP-20 and HDE-20
- 108-40031—Connector, AMPLIMITE HDP-20 Solder Cup
- 108-40032—Accessories, Cable Clamp Assemblies, Shielded AMPLIMITE
- 108-40016—Connector System, AMPLIMITE HD-20 Cassette

Board Mount Connectors—Pages 78 thru 109

- 108-1092 —Connector, AMPLIMITE, Right-Angle, HD-22
- 108-40025—Connector, AMPLIMITE HD-20, All-Plastic, Front Metal-Shell, Full Metal-Shell, Right-Angle and Straight Posted Pc Board Assemblies
- 108-40014—Connector, AMPLIMITE, ACTION PIN
- 108-40028—Connector, AMPLIMITE Stacked

Application Specifications describe requirements for using the product in its intended application and/or crimping information. They are intended for the Packaging and Design Engineer and the Setup person.

Cable Connectors—Pages 5 thru 77

- 114-10001—AMPLIMITE HDP-22 Connectors and High Density 22 Contacts
- 114-40002—Connector, HDE-20, Mass Termination, Application of
- 114-40003—Connector, HDE-20, F Crimp, Application of
- 114-40006—HDE Connectors for Overmolding
- 114-40008—HDE Connectors for Enclosure Kits
- 114-40005—Ribbon Cable Connectors (HDF-20)
- 114-46001—Shielded HDF-20 Low Profile Connectors
- 114-40007—HDP Connectors for Overmolding
- 114-40009—HDP Connectors for Enclosure Kits
- 114-10000—Contact, 20 DF, Application of

Board Mount Connectors—Pages 78 thru 109

- 114-40021—Connector, AMPLIMITE, Right-Angle, HD-22
- 114-40010—AMPLIMITE Right-Angle Front Metal-Shell Connectors
- 114-40013—Connector, HDP-20 Metal-Shell (Right-Angle)
- 114-40015—AMPLIMITE HD-20 Series .318, .478 and .590 All-Plastic Right-Angle Pc Board Connectors
- 114-40017—AMPLIMITE Stacked Connectors
- 114-40023—AMPLIMITE HD-20 Straight Posted, Front Metal-Shell

Technical Documents

(Continued)

Instruction Sheets provide instructions for assembling or applying the product. They are intended for Manufacturing Assembler or Operator.

Cable Connectors—Pages 5 thru 77

- IS 9381—AMPLIMITE HDP-22 Connectors
- IS 6645—HDE-20 Metal-Shell Connectors
- IS 6621—HDE-20 All-Plastic Connectors
- IS 6631—HDE-20 Extraction Tool 91232-1
- IS 6638—HDE-20 Pistol Grip Hand Tool
- IS 6656—HDE-20 Pneumatic Hand Tool
- IS 6871—HDE-20 Mass Termination Tooling
- IS 6608—HDF-20 Low Profile Connectors, One Step
- IS 7777—Manual Applicator Frame Assembly 91085-2
- IS 6893—HDF-20 Termination Tooling Assembly (Die Set) 91257-1
- IS 6842—HDF-20 Termination Tooling Assemblies (Die Sets) 91250-1 and 91250-2 (3 Foot Rack)
- IS 9011—HDF-20 Termination Tooling Assembly (Die Set) 91248-1 for Shielded Connectors
- IS 6845—HDF-20 Termination Tooling Assembly (Die Set) 91249-1 for Shielding Hardware
- IS 6967—AMP Economy Tooling 91280-1 for AMPLIMITE Bulkhead and 50 Position HDF Connectors
- IS 6938—AMP Hand Tool Kit 91271-1 for AMPLIMITE Connectors
- IS 6962—AMP Economy Tooling 91275-1 for AMPLIMITE HDF Low-Profile Connectors
- IS 9257—AMP Comptool Tooling Assembly 543306-1 for AMP-LATCH Connectors
- IS 7514—HDP-20 Connectors with Crimp Type Contacts
- IS 7799—AMPLIMITE Solder Cup Contacts
- IS 9375—HDP-22 Hand Tool
- IS 9404—Insertion/Extraction Tool 91285-1
- IS 7521—Application and Maintenance of AMP Hand Crimping Tool 90265-1
- IS 7634—Application and Maintenance of AMP Hand Crimping Tool 90302-1
- IS 7694—Application and Maintenance of AMP Hand Crimping Tool 90312-1
- IS 6678—Application and Maintenance of AMP Hand Crimping Tool 91239
- IS 6695—Application and Maintenance of AMP Hand Crimping Tool 90405-1
- IS 6709—Application and Maintenance of AMP Hand Crimping Tool 90406-1
- IS 7954—Application and Maintenance of AMP Hand Crimping Tool 90374-1
- IS 9315—Application and Maintenance of AMP Hand Crimping Tool 543344-1
- IS 9241—Application and Maintenance for AMP Die Assemblies 58236-1, -2, -3 and -4
- IS 9242—Application and Maintenance for AMP Die Assemblies 58237-1 and -2
- IS 9243—Application and Maintenance for AMP Die Assemblies 58238-1 and -2
- IS 9244—Application and Maintenance for AMP Die Assemblies 58239-1, -2, -3 and -4
- IS 6732—Pneumatic Tool 91112-3 (Auto-Cycle)
- IS 6864—One-Step Adapter Kit 543160-1 for Pneumatic (Auto Cycle) Tool
- IS 6905—One-Step Termination Shuttle Tool 91265-1
- IS 9318—Application & Maintenance for AMP Die Assemblies 543013-() for AMPLIMITE Crimp Ferrules
- IS 9193—HDP-20 Solder Cup Connectors
- IS 9217—Solder Cup Connector Shielding Hardware Kit
- IS 9218—Solder Cup Connector Shielding Enclosure Kit

- IS 9199—Shielding Enclosure Expansion Tools
- IS 9010—Basic Shielding Hardware Kits
- IS 9172—Shielding Hardware Enclosure Kits
- IS 6609—HDP-20 Shielded Cable Clamp Kits, Straight Exit
- IS 6769—HDP-20 Shielded Cable Clamp Kits, 90° Exit
- IS 6658—HDE-20 Slide-On Back Covers
- IS 6659—AMPLIMITE Cable Clamp Kits 745306 and 745311
- IS 7837—Female Screwlock Kit 205817-1 and Male Screw Retainer Kit 205980-1
- IS 7785—Locking Post Assembly Kit 206514-1 and Slide Latch Assembly Kit 206942-1
- IS 9128—AMPLIMITE Latching Blocks
- IS 9129—AMPLIMITE HDP One-Piece Spring Latches
- IS 9130—AMPLIMITE Two-Piece Spring Latches for Metal Shields
- IS 9131—AMPLIMITE Two-Piece Spring Latches for Post Molded Strain Reliefs
- IS 6551—AMPLIMITE Slide Latch Kits and Slide Latch Post Kits
- IS 9238—AMPLIMITE Universal Cable Clamp Kits
- IS 7555—AMPLIMITE Cable Clamp Assemblies
- IS 6906—Release Tool Kit 91266-2 for AMPLIMITE Conn. Cable Clamps
- IS 6662—AMPLIMITE Cassette and Holder Units
- IS 6809—Cassette Connector Release Tool 91251-1

Board Mount Connectors—Pages 78 thru 109

- IS 9031—ACTION PIN Receptacle Installation Tooling: 9, 15, 25, 37 and 50 Positions
- IS 6889—ACTION PIN Insertion/Extraction Tool Kit 91261-1
- IS 9293—ACTION PIN Plug Installation Tooling

Military and Federal Specifications

- | | |
|-------------|---|
| QQ-C-530 | Beryllium Copper |
| QQ-B-626 | Copper Alloy |
| QQ-B-750 | Phosphor Bronze |
| ASTM A109 | Steel |
| ASTM A108 | Cold Rolled Steel |
| MIL-C-50 | Brass |
| QQ-N-290 | Nickel Plating |
| ASTM B633 | Zinc Plating (Type I or III, Class SC1) |
| MIL-C-14550 | Copper Plating |
| MIL-G-45204 | Gold Plating |
| MIL-P-81728 | Tin-Lead Plating |
| MIL-T-10727 | Tin Plating |

Hardware

For drawings, technical data or samples, contact your AMP sales engineer or call the AMP Product Information Center 1-800-522-6752.

Male Screw Retainers for Metal-Shell Connectors (HDE and HDP)

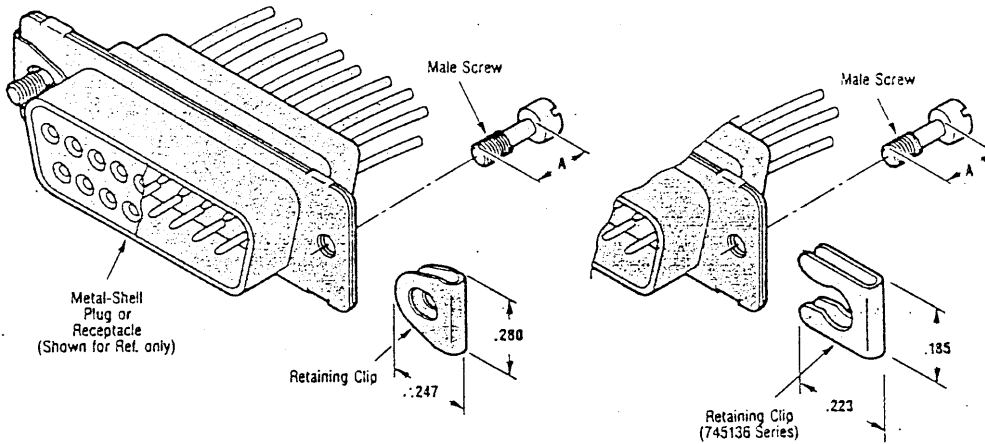
Material and Finish

Male Screw—Steel, zinc plated clear or yellow chromate

Retaining Clip—.012 steel, zinc plated or stainless steel**

Related Product Data:

Connectors used with:
HDE Metal-Shell—page 15
HDP Metal-Shell—pages 8 & 30
Technical Documents—pages 114 & 115



Male Screw Finish	Thread Size	Dimension A	Male Screw Retainer Kit No.	
			Individual	Bulk Packed*
Yellow Chromate	4-40	.250	205980-1	205980-3
		.200	745136-1**	745136-2**
	M3 (Metric)	.250	207871-1	207871-2
Clear Chromate	4-40	.250	205980-4	205980-5
		.200	745136-3**	745136-4**

*Each part is individually bulk packed for multiple kit orders.

**Retaining clips are stainless steel for Male Screw Retainer Series 745136.

Notes: 1. All parts are packaged unassembled.

2. Each kit is comprised of two male screws and two retaining clips. Male screw retainers are also furnished as part of cable clamp kits (pages 51 and 53).

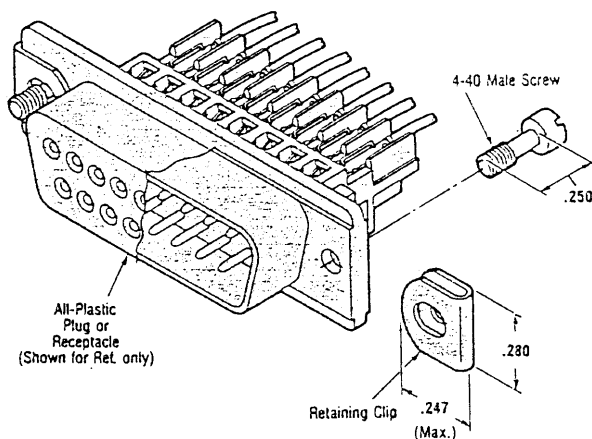
3. Male screw retainers mate with female screwlocks (page 61), with HDP metal-shell connectors featuring 4-40 threaded inserts (page 25) and with HD metal-shell board mount connectors featuring 4-40 threaded inserts or female screwlocks (pages 85-91, 96, 97, 102, 103 and 108).

4. Retaining clips must be assembled onto connector flanges with threaded hole toward wire side of connector.

Hardware

For drawings, technical data or samples, contact your AMP sales engineer or call the AMP Product Information Center 1-800-522-6752.

Male Screw Retainers for All-Plastic Connectors (HDE)



Kit Numbers:

745647-1 (individually packaged, see Note 2.)
745647-2 (bulk packed)*

*Each part is individually bulk packed for multiple kit orders.

- Notes:
1. All parts are packaged unassembled.
 2. Each kit is comprised of two 4-40 male screws and two retaining clips.
 3. Male screw retainers mate with female screwlocks (page 61), with HDF all-plastic connectors featuring 4-40 threaded inserts (page 24), with HD all-plastic board mount connectors featuring integral standoffs with 4-40 threaded inserts and female screwlocks (pages 92-95, 104, 106 and 109).
 4. Retaining clips must be assembled onto connector flanges with threaded hole toward wire side of connector.

Material and Finish:

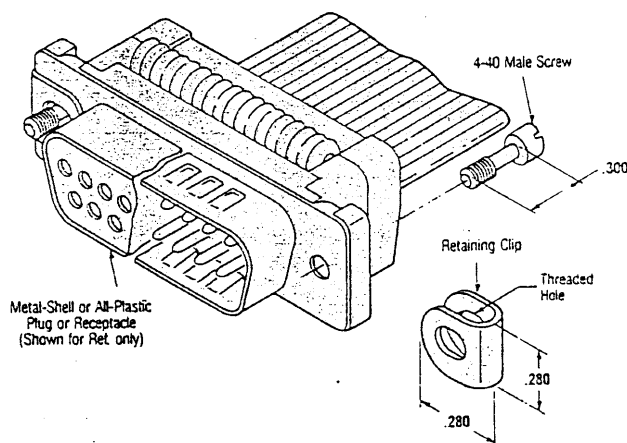
Male Screw—Steel, zinc plated yellow chromate

Retaining Clip—.012 steel, zinc plated yellow chromate

Related Product Data:

Connectors used with:
HDE All-Plastic—page 14
Technical Documents—pages 114 & 115

Male Screw Retainers for Metal-Shell and All-Plastic Connectors (HDF)



Kit Numbers:

746881-1 (individually packaged, see Note 2.)
746881-2 (bulk packed)*

*Each part is individually bulk packed for multiple kit orders.

- Notes:
1. All parts are packaged unassembled.
 2. Each kit is comprised of two male screws and two retaining clips.
 3. Male screw retainers mate with female screwlocks (page 61), and with HD board mount connectors featuring female screwlocks (pages 85-97, 102, 103-104, 108 and 109).
 4. Retaining clips must be assembled onto connector flanges with threaded hole toward ribbon cable side of connector.

Material and Finish:

Male Screw—Steel, zinc plated clear chromate

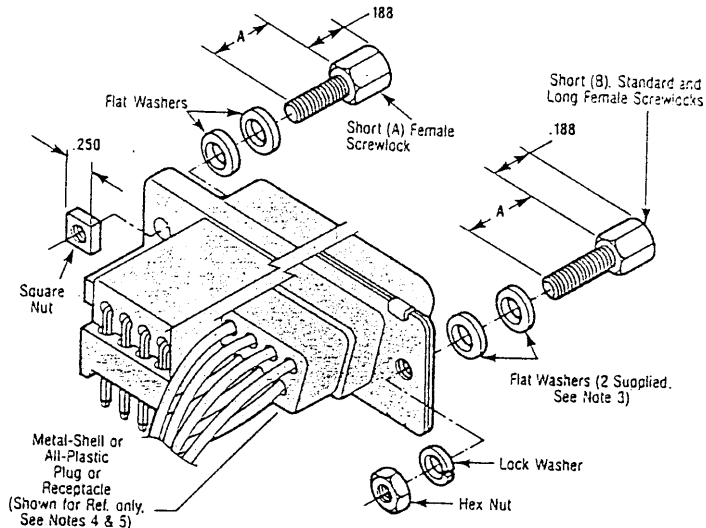
Retaining Clip—.012 steel, zinc plated yellow chromate

Related Product Data:

Connectors used with:
HDF Metal-Shell and All-Plastic—pages 24 & 25
Technical Documents—pages 114 & 115

Hardware

Female Screwlocks for Metal-Shell and All-Plastic Connectors (HDE, HDF, HDP)



For drawings, technical data or samples, contact your AMP sales engineer or call the AMP Product Information Center 1-800-522-6752.

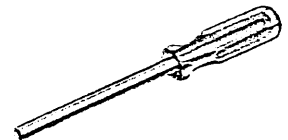
Material and Finish:

All Parts—Cold rolled steel, zinc plated clear or yellow chromate

Related Product Data:

Connectors used with:
HDE Metal-Shell or All-Plastic—pages 14-16
HDF Metal-Shell or All-Plastic—pages 24 & 25
HDP Metal-Shell—pages 8, 9, 30 & 31
HD Metal-Shell—pages 82-91, 96, 97, 100-103 & 108
HO All-Plastic—pages 92-95, 104-107 & 109

Technical Documents—pages 114 & 115



Nut Driver, Part No. 811262-1
(Used for assembling female screwlocks to connector flange)

Connector Used with	Style	Dimension A	Thread Size	Finish	Kit Number	
					Individual	Bulk Packed*
HO All-Plastic Right-Angle Plugs and Receptacles	Short (A)	.250	4-40	Yellow Chromate	207952-1	—
				Clear Chromate	207952-3	—
HDE Metal-Shell or All-Plastic Plugs and Receptacles	Short (B)	.250	4-40	Yellow Chromate	745563-1	745563-2
				Clear Chromate	745563-3	745563-4
				Yellow Chromate	205817-1	205817-2
				Clear Chromate	205817-3	205817-4
HDP or HDF Metal-Shell or All-Plastic Plugs and Receptacles	Standard	.312	4-40	Yellow Chromate	—	748558-4**
				Clear Chromate	207872-1	207872-2
				Yellow Chromate	207872-3	207872-4
				Clear Chromate	207719-1	207719-2
HO All-Plastic Plugs and Receptacles with Integral Standoffs	Long	.560	4-40	Yellow Chromate	207719-3	207719-4
				Clear Chromate	207719-1	207719-2
				Yellow Chromate	207719-3	207719-4
				Clear Chromate	207719-1	207719-2

*Each part is individually bulk packed for multiple kit orders.

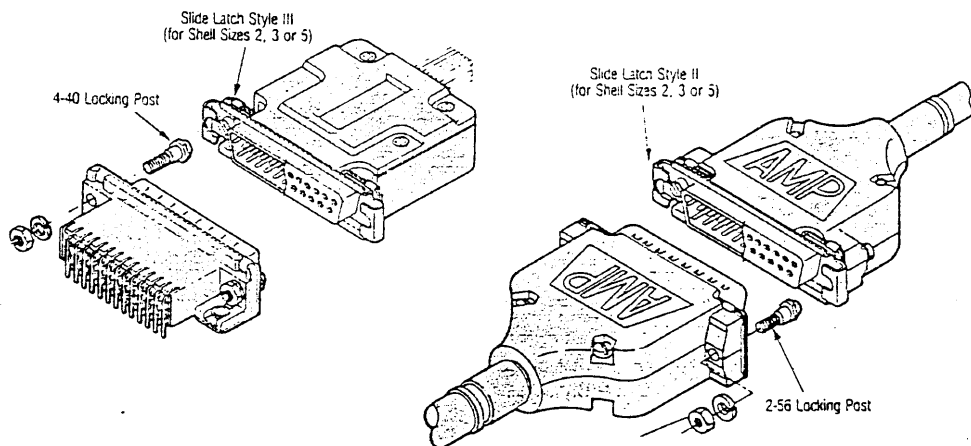
**With captivated star washer. No additional hardware included.

- Notes:
1. All parts are packaged unassembled.
 2. Each female screwlock kit is comprised of two assemblies as illustrated above.
 3. One or two flat washers may be required for panel thicknesses less than .060. Female screwlocks are not recommended for panel thicknesses greater than .060.
 4. 2-56 is the male thread size. The female thread size is 4-40.
 5. Female screwlocks with 2-56 thread size are to be used with cable clamps with mounting flanges. Female screwlocks with 4-40 and M3 (metric) thread sizes can be used with all other cable clamps.
 6. Female screwlocks mate with male screw retainers (pages 59 & 60).
 7. Short female screwlocks cannot be used with HDF connectors.

Hardware

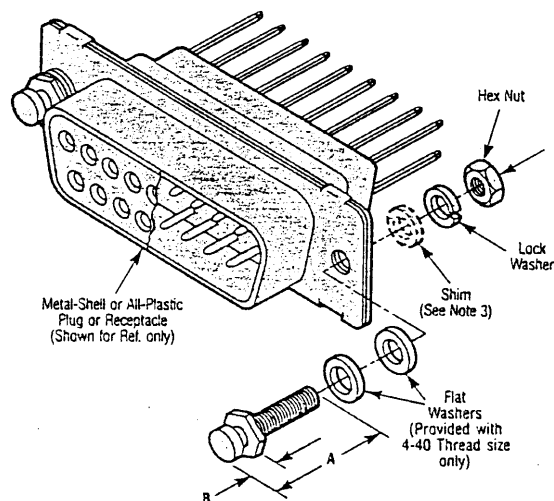
For drawings, technical data or samples, contact your AMP sales engineer or call the AMP Product Information Center 1-800-522-6752.

Locking Posts and Slide Latches



Typical Applications of Locking Posts and Slide Latches

Locking Posts



Material and Finish:

All Parts—Cold rolled steel, zinc plated clear or yellow chromate

Related Product Data:

Connectors used with:
 HDE Metal-Shell or All-Plastic—pages 14-16
 HDF Metal-Shell or All-Plastic—pages 24 & 25
 HDP Metal-Shell—pages 8, 9, 30 & 31
 HD Metal-Shell—pages 82-91, 96, 97, 100-103 & 108
 HD All-Plastic—pages 92-95, 104-107 & 109
 Technical Documents—pages 114 & 115

Thread Size	Locking Post Finish	Dimensions		Locking Post Kit Number (See Note 4)	
		A	B	Individual	Bulk Packed*
4-40	Yellow Chromate	.410	.110	206514-1	206514-3
		.560	.110	206514-6	206514-7
2-56	Yellow Chromate	.615	.172	747242-1	747242-2
	Clear Chromate	.615	.172	747242-3	747242-4

*Each part is individually bulk packed for multiple kit orders.

Notes: 1. All parts are packaged unassembled.

2. Each kit is comprised of two complete assemblies, as illustrated above.

3. For front panel mounting, it is recommended that a shim be used between the connector flange and panel to prevent bowing of the flange.

4. Locking posts with 2-56 thread size are to be used with cable clamps with mounting flanges. Locking posts with 4-40 thread size can be used with all other cable clamps.

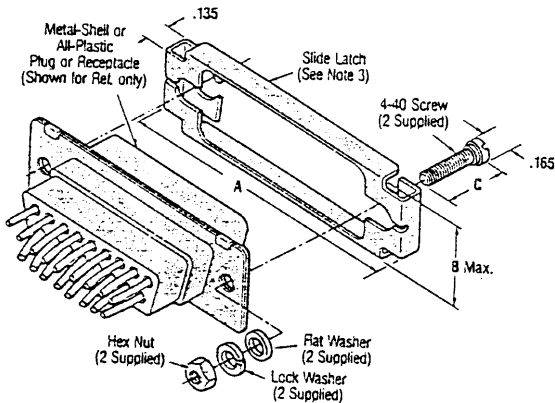
5. Locking posts mate with slide latches (page 63).

Hardware

For drawings, technical data or samples, contact your AMP sales engineer or call the AMP Product Information Center 1-800-522-6752.

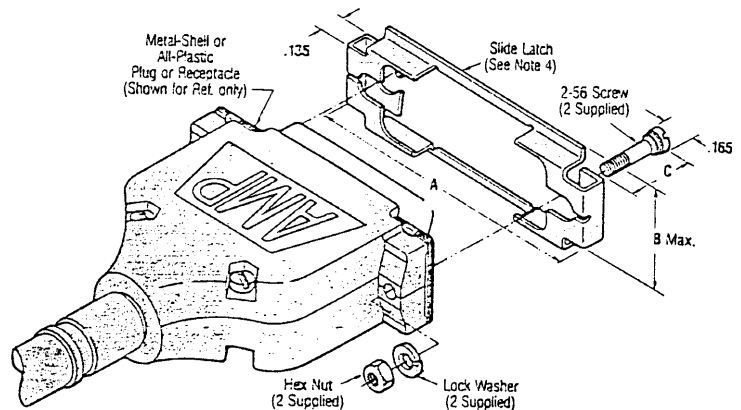
Slide Latches

Style I



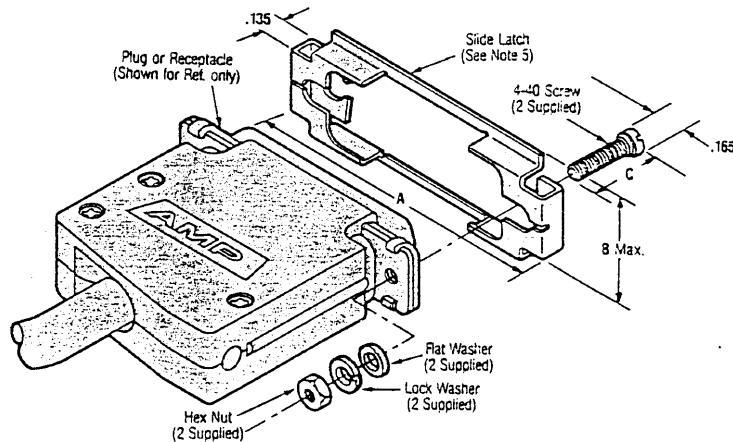
For Shell Sizes 1, 2 and 4

Style II



For Shell Sizes 2, 3 and 5

Style III



For Shell Sizes 2, 3 and 5

Shell Size	Style	Dimensions			Slide Latch Kit Numbers	
		A	B	C	Individual	Bulk Packed*
1	I	1.397	.490	.415	745404-1	745404-2
	II	1.725	.490	.415	747475-1	747475-2
2	III	1.725	.630	.547	745583-1	745583-2
	II	1.725	.630	.415	745583-5	745583-6
3	III	2.265	.630	.547	745584-1	745584-2
	II	2.265	.630	.415	745584-3	745584-4
4	III	2.913	.490	.415	745407-1	745407-2
	II	2.819	.736	.547	745578-1	745578-2
5	III	2.819	.736	.415	745578-3	745578-4

*Each part is individually bulk packed for multiple kit orders.

- Notes:
1. All parts are packaged unassembled.
 2. Each kit is comprised of a slide latch and two screws, flat washers (if required), lock washers and hex nuts. Style I slide latches are also furnished as part of cable clamp kits (page 55).
 3. Style I slide latches can be used with cable clamps that do not extend beyond the front flange of the connector or on connectors without cable clamps.
 4. Style II slide latches can be used with any cable clamp that has the mounting ear configuration as shown above.
 5. Style III slide latches can be used on connectors without cable clamps or with cable clamps that do not have the mounting ear configuration shown with Style II above.
 6. Slide latches mate with locking posts (page 62).

Material and Finish:

4-40 Screws, Washers & Hex Nuts—Steel, zinc plated yellow chromate

2-56 Screws, Washers & Hex Nuts—Steel, zinc plated clear chromate

Slide Latch—Stainless steel

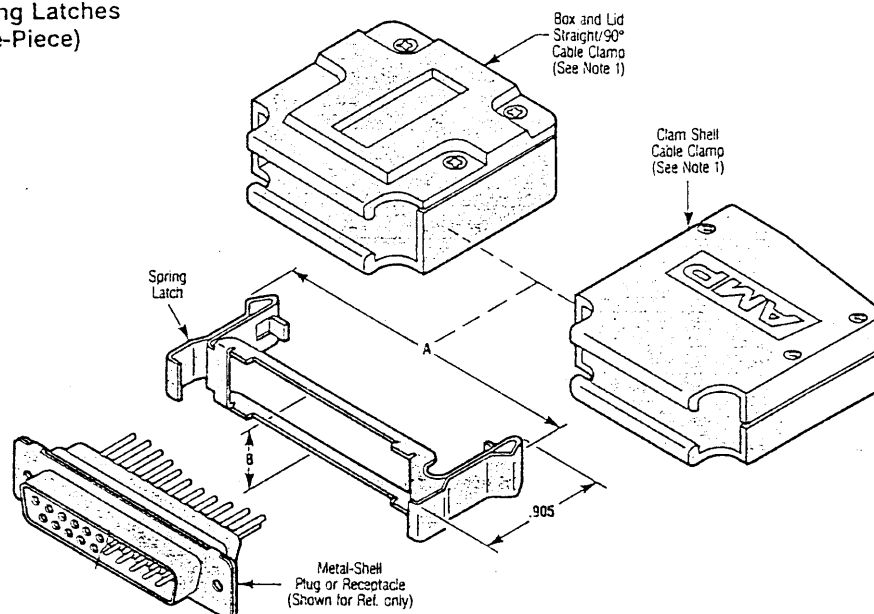
Related Product Data:

Connectors used with:
HDE Metal-Shell or All-Plastic—pages 14-16
HDF Metal-Shell or All-Plastic—pages 24 & 25
HDP Metal-Shell—pages 8, 9, 30 & 31
HD Metal-Shell—pages 82-91, 96, 97, 100-103 & 108
HD All-Plastic—pages 92-95, 104-107 & 109
Technical Documents—114 & 115

Hardware

For drawings, technical data or samples, contact your AMP sales engineer or call the AMP Product Information Center 1-800-522-6752.

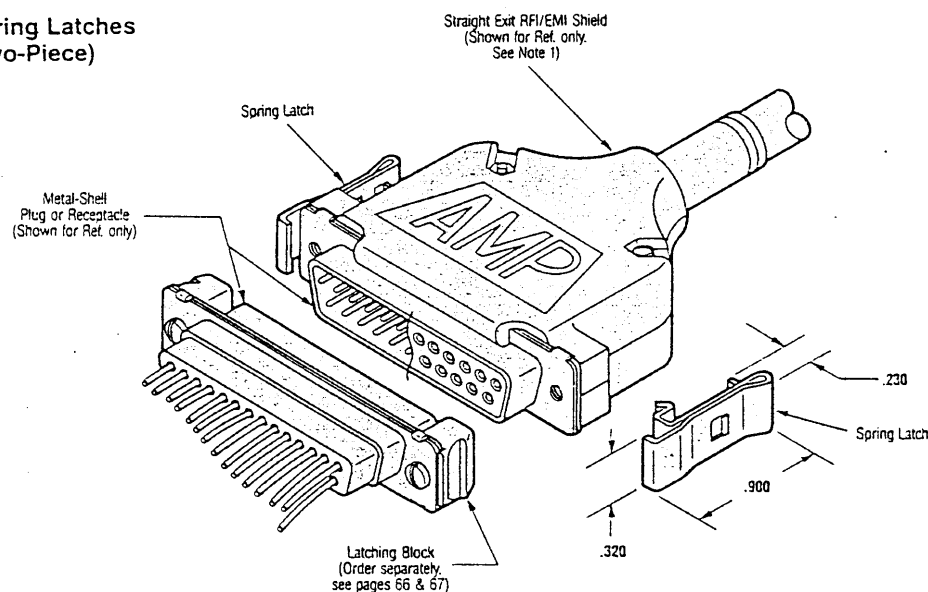
Spring Latches (One-Piece)



Shell Size	Dimensions		Spring Latch Part Number
	A	B	
1	1.475	.470	745011-1
2	1.835	.470	745012-1
3	2.340	.470	745013-1
4	2.990	.470	745014-1
5	2.895	.585	745015-1

- Notes: 1. One-piece spring latches are also furnished as part of cable clamp kits (pages 51 & 53).
2. One-piece spring latches mate with latching blocks (pages 66 & 67).

Spring Latches (Two-Piece)



Spring Latch Part Numbers:
745255-2 (two per package)
745255-3 (bulk packed)*

*Two-piece spring latches are individually bulk packed for multiple part orders.

- Notes: 1. Two-piece spring latches can be used with straight/90° cable clamps (page 48) and RFI/EMI shields (page 54).
2. Two-piece spring latches mate with latching blocks (pages 66 & 67).

Typical Application of Two-Piece Spring Latches with Straight Exit RFI/EMI Shield

Material:

.015 stainless steel

Related Product Data:

Connectors used with:
HDP—pages 8 & 30
Technical Documents—
pages 114 & 115

Material:

.015 Stainless steel

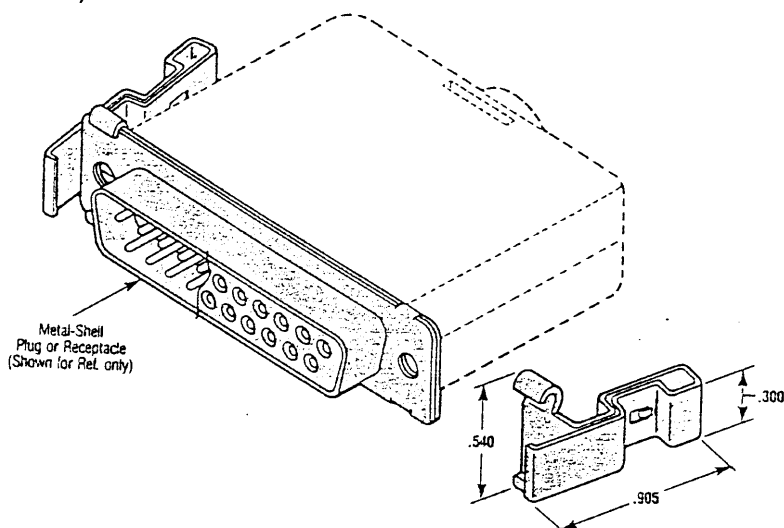
Related Product Data:

Connectors used with:
HDE Metal-Shell—page 15
HDP Metal-Shell (Tin plated only)— pages 8 & 30

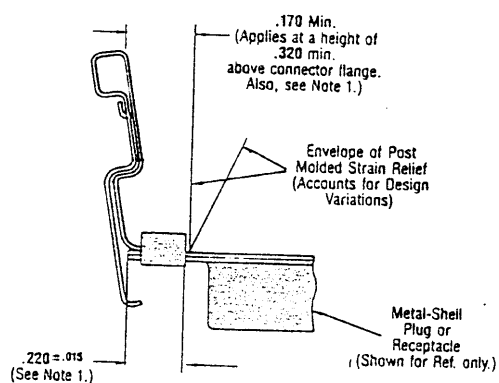
Hardware

For drawings, technical data or samples, contact your AMP sales engineer or call the AMP Product Information Center 1-800-522-6752.

Spring Latches for Post Molded Strain Reliefs (Two-Piece)



Typical Application of Two-Piece Spring Latches with Post Molded Strain Relief



Spring Latch Part Numbers:
745779-2 (two per package)
745779-3 (bulk packed)*

*Two-piece spring latches are individually bulk packed for multiple part orders.

- Notes:** 1. These dimensions must be maintained to assure satisfactory operation of the spring latches.
2. Two-piece spring latches mate with latching blocks (pages 66 & 67).

Material:

Stainless steel

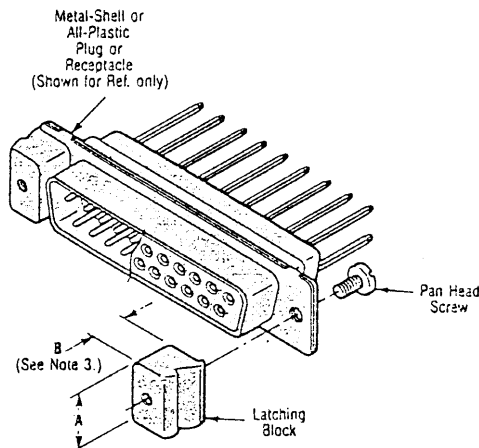
Related Product Data:

Connectors used with:
HDE Metal-Shell—page 15
HDP Metal-Shell—pages 8 & 30
Technical Documents—
pages 114 & 115

Hardware

For drawings, technical data or samples, contact your AMP sales engineer or call the AMP Product Information Center 1-800-522-6752.

Latching Blocks with Threaded Hole



Material and Finish:

Latching Blocks—Zinc
Pan Head Screws—Steel, zinc plated

Related Product Data:

Connectors used with:
HDE Metal-Shell or All-Plastic—pages 14-16
HDF Metal-Shell or All-Plastic—pages 24 & 25
HDP Metal-Shell—pages 8, 9, 30 & 31
HD Metal-Shell—pages 82-91, 96, 97, 100-103 & 108
HD All-Plastic—pages 92-95, 104-107 & 109

Mating/Panel Mounting—page 110

Technical Documents—pages 114 & 115

Shell Size	Dimensions		Thread Size	Mounting Screw		Rear Panel Latching Block Part Number		Front Panel Latching Block Part Number		Front Panel Latching Block Kit Number
	A	B		Length	Part Number	Individual**	Bulk Packed*	Individual**	Bulk Packed*	
1 thru 4	.400		M3 (Metric)	—	—	745403-1	745403-2	—	—	—
			4-40	—	—	745403-8	745403-9	—	—	—
	.220		4-40	—	—	747717-2	747717-3	—	—	—
			4-40	—	—	747717-2	747717-3	—	—	—
5	.250		M3 (Metric)	6 mm	18019-1	—	—	208101-1	208101-2	745007-1
			4-40	4.5 mm	3-18019-0	—	—	208101-1	208101-2	745007-3
			4-40	.187	26853-4	—	—	208101-8	208101-9	745007-5
			4-40	.187	26853-4	—	—	208101-8	208101-9	745007-5
	.190		M3 (Metric)	—	—	745403-5	745403-6	—	—	—
			4-40	—	—	1-745403-1	1-745403-2	—	—	—
			M3 (Metric)	6 mm	18019-1	—	—	—	—	745007-2
			4-40	4.5 mm	3-18019-0	—	—	—	—	745007-4
	.190		4-40	.187	26853-4	—	—	1-208101-1	1-208101-2	745007-6
			4-40	.187	26853-4	—	—	1-208101-1	1-208101-2	745007-6

*Bulk packed for multiple part orders.

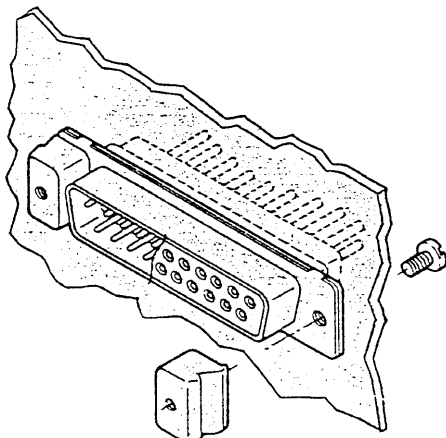
**Individual kits contain two latching blocks per package.

Notes: 1. All parts are packaged unassembled.

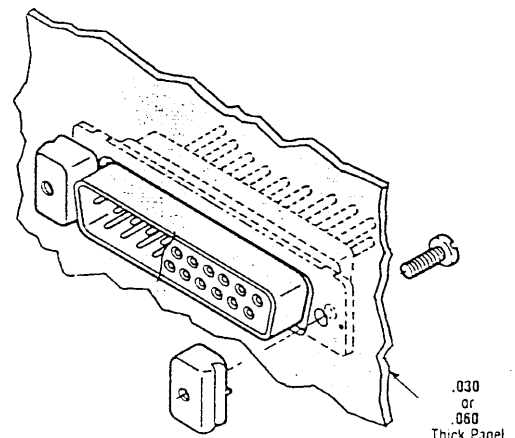
2. Each front panel latching block kit is comprised of two latching blocks and two pan head screws of the appropriate length and thread size. Front panel latching blocks are also furnished as part of cable clamp kits (pages 51 & 53).

3. B dimension .250 is for connector flange mounting, .220 is for use with .030 thick panels, and .190 is for use with .060 thick panels.

4. Latching blocks mate with spring latches (pages 64 & 65).



Typical Application of Front-Panel Mounted Subminiature D Connector using Front-Panel Latching Blocks

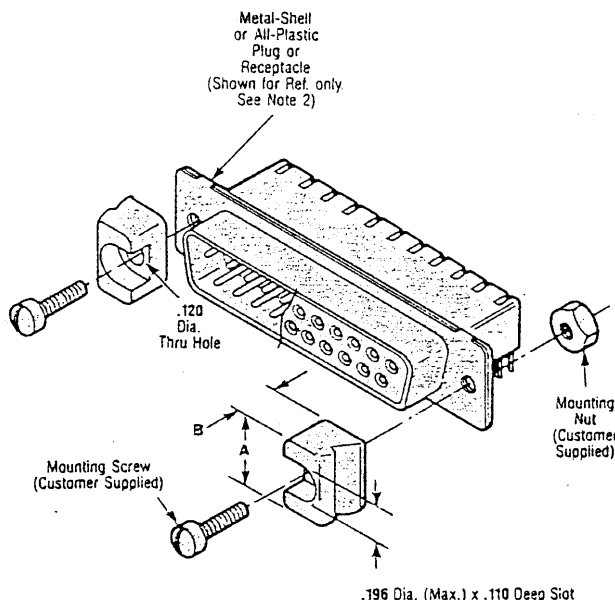


Typical Application of Rear-Panel Mounted Subminiature D Connector using Rear-Panel Latching Blocks

Hardware

For drawings, technical data or samples, contact your AMP sales engineer or call the AMP Product Information Center 1-800-522-6752.

Latching Blocks with Slot Recess and Thru Hole



Material:

Latching Blocks—Zinc

Related Product Data:

Connectors used with:
HDE Metal-Shell or All-Plastic—pages 14-16
HDF Metal-Shell or All-Plastic—pages 24 & 25
HDP Metal-Shell—pages 8, 9, 30 & 31
HD Metal-Shell—pages 82-91, 96, 97, 100-103 & 108
HD All-Plastic—pages 92-95, 104-107 & 109

Mating/Panel Mounting—page 110

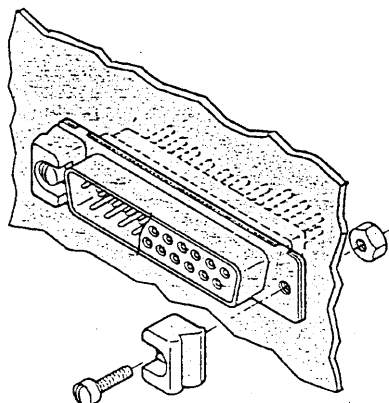
Technical Documents—pages 114 & 115

Shell Size	Dimensions		Panel Thickness	Rear-Panel Latching Block Part Number		Front-Panel Latching Block Part Number	
	A	B		Individual**	Bulk Packed*	Individual**	Bulk Packed*
1 thru 4	.400	.160	.090	747080-2	—	—	—
		.190	.060	745245-2	745245-3	—	—
		.250	—	—	—	745286-2	745286-3
5	.530	.190	.060	745245-5	745245-6	—	—

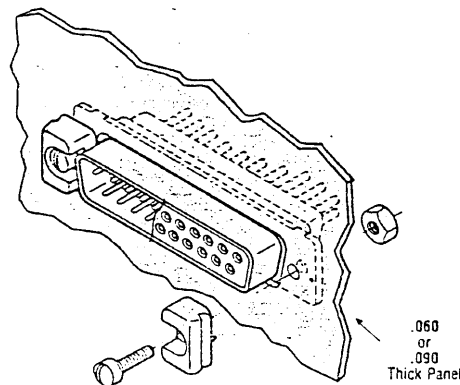
*Bulk packed for multiple part orders.

**Individual kits contain two latching blocks per package.

- Notes: 1. Mounting screws and nuts are to be supplied by Customer.
2. These latching blocks allow mounting screws to be installed thru the front of the block and to be screwed into the bracket of a right-angle connector, a fixed insert in a connector mounting flange, or a nut behind the connector mounting flange (as illustrated above).
3. Latching blocks mate with spring latches (pages 64 & 65).



Typical Application of Front-Panel Mounted Subminiature D Connector using Front-Panel Latching Blocks



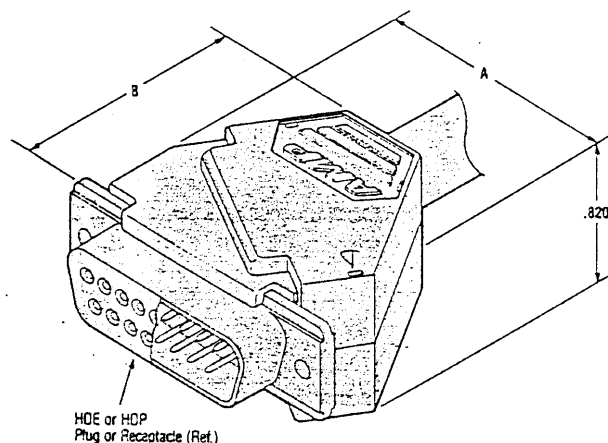
Typical Application of Rear-Panel Mounted Subminiature D Connector using Rear-Panel Latching Blocks

AMP

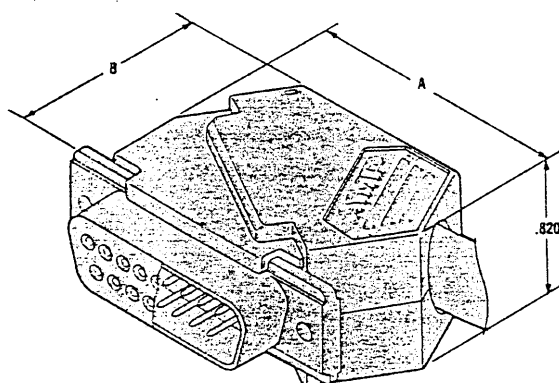
Unshielded Cable Clamps

For drawings, technical data or samples, contact your AMP sales engineer or call the AMP Product Information Center 1-800-522-6752.

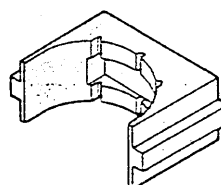
Straight/90° Exit



Straight Cable Exit Application



90° Cable Exit Application



Typical Cable Support Gate
(Supplied with Cable Clamp Kit)

Straight/90° Exit Cable Clamps can be used on a plug or receptacle and will not interfere with commonly used mating hardware. Their three-piece construction allows easy assembly to a cable harness. Also, the same cable clamp components are used for both straight and 90° cable exit applications. This is accomplished by simply positioning the Male and Female Panels on the Yoke for the desired angle.

Material:

Black thermoplastic

Related Product Data:

Connectors used with:
HDE All-Plastic—page 14
HDE Metal-Shell—page 15
HDP Metal-Shell—pages 8 & 30

Other accessory capabilities:
Female Screwlocks—page 61
Locking Posts and Slide Latches—pages 62 & 63
Latching Blocks—pages 66 & 67

Technical Documents—
pages 114 & 115

Accessories

Shell Size	Cable Clamp Configuration	Dimensions		Cable Dia.	Cable Clamp Kit No.	
		A	B		Individual	Bulk Packed*
3	Straight Exit	1.906	1.672	.550	745306-1	745306-2
	90° Exit	2.066	1.396			
4	Straight Exit	2.424	1.820	.750	745311-1	745311-2
	90° Exit	2.638	1.596			

*Each part is individually bulk packed for multiple kit orders.

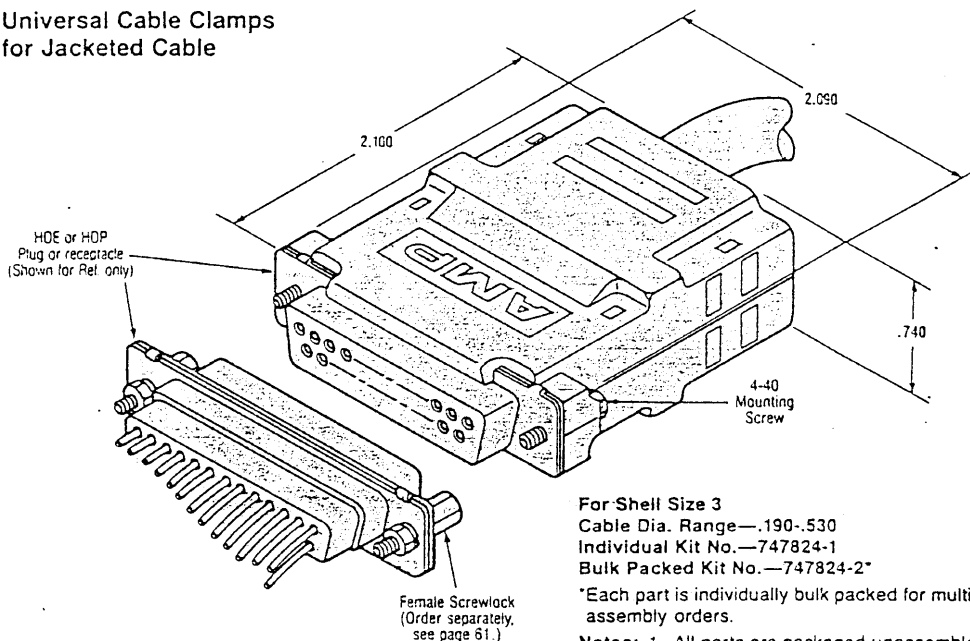
Notes: 1. All parts are packaged unassembled.

2. Each cable clamp assembly includes a yoke, male panel, female panel and four cable support gates. The cable diameter is adjustable by changing the cable support gates.

Unshielded Cable Clamps

For drawings, technical data or samples, contact your AMP sales engineer or call the AMP Product Information Center 1-800-522-6752.

Universal Cable Clamps for Jacketed Cable



For Shell Size 3
Cable Dia. Range—.190-.530
Individual Kit No.—747824-1
Bulk Packed Kit No.—747824-2*

*Each part is individually bulk packed for multiple assembly orders.

Notes: 1. All parts are packaged unassembled.
2. Each kit is comprised of two cable clamp halves, two cable clamp wedge sets and two mounting screws.

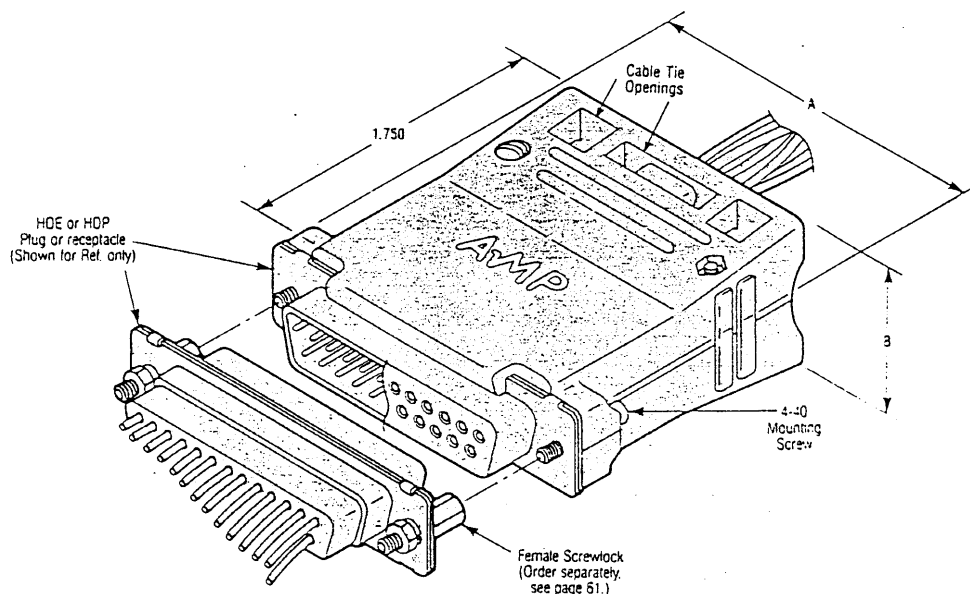
Material and Finish:

Cable Clamp Housing—
Thermoplastic, black
Cable Clamp Wedge Set—
Thermoplastic, black
4-40 Mounting Screws—
Steel, zinc plated

Related Product Data:

Connectors used with:
HDE Metal-Shell—page 15
HDP Metal-Shell—pages 8 & 30
Other accessory capabilities:
Spring Latches (Two Piece)—
page 64
Technical Documents—
pages 114 & 115

Straight/90° Exit



Material and Finish:

Cable Clamp Housing—
Thermoplastic, gray
4-40 Mounting Screws—
Steel, zinc plated
4-40 Housing Screws & Hex Nuts
—Steel, zinc plated

Related Product Data:

Connectors used with:
HDE All-Plastic—page 14
HDE Metal-Shell—page 15
HDP Metal-Shell—pages 8 & 30
Other accessory capabilities:
Spring Latches (Two Piece)—
page 64
Technical Documents—
pages 114 & 115

Shell Size	Dimensions		Cable Dia. (Max.)	Cable Clamp Kit. No.	
	A	B		Individual	Bulk Packed*
2	1.550	.826	.350	206471-1	206471-2
3	2.090	.826	.335	206472-1	206472-2
			.460	745134-1	745134-2
4	2.738	.826	.675	745081-1	745081-2
5	2.644	.938	.775	745082-1	745082-2

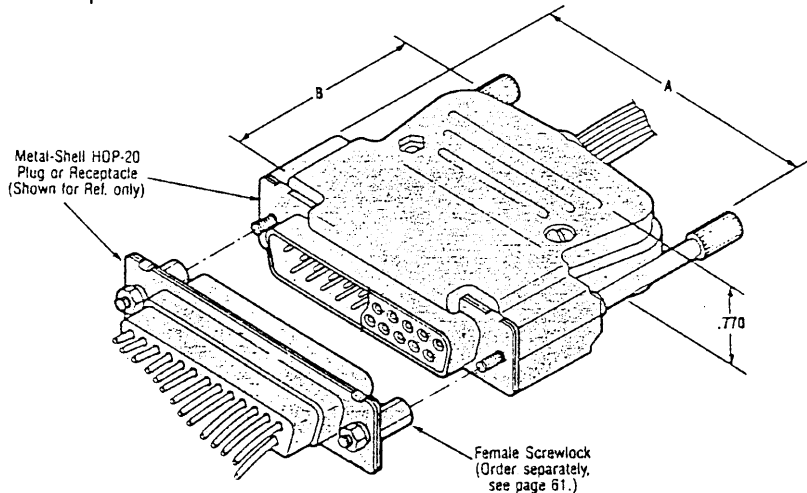
*Each part is individually bulk packed for multiple assembly orders.

Notes: 1. All parts are packaged unassembled.
2. Straight or 90° cable exit is achieved by inserting AMP-TY Cable Ties through cable tie openings and clamping the cable to one housing half only.

Unshielded Cable Clamps

For drawings, technical data or samples, contact your AMP sales engineer or call the AMP Product Information Center 1-800-522-6752.

Straight Exit Dataphone



Material and Finish:

Cable Clamp Housing—Polyester, black
4-40 Fillister Head Screws & Hex Nuts—Steel, clear zinc plated
Jackscrews—Steel, black zinc plated

Related Product Data:

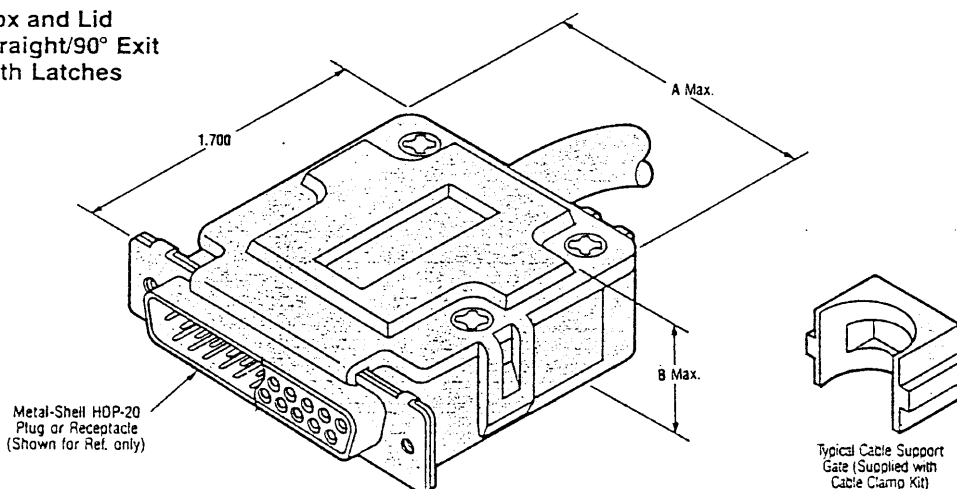
Connectors used with:
HDP Metal-Shell—pages 8 & 30

Shell Size	Dimensions		Max. Cable Dia. (without Gate)	Max. Cable Dia. (with Gate)	Cable Gate Identification*	Thread Size	Cable Clamp Kit No.
	A	B					
2	1.575	1.312	.400	.200	2A	M3 (Metric)	745122-1
				.260	2B		
				.320	2C		
				.200	2A	4-40	745122-2
				.260	2B		
				.320	2C		
3	2.115	1.421	.500	.250	3A	M3 (Metric)	745121-1
				.340	3B		
				.420	3C		
				.250	3A	4-40	745121-2
				.340	3B		
				.420	3C		

*Molded-in identification (as shown in chart above) is provided on cable support gates to facilitate proper selection with regard to shell size and maximum acceptable cable diameter.

- Notes: 1. All parts are packaged unassembled.
2. Cable diameter is adjustable by changing cable support gates.

Box and Lid Straight/90° Exit with Latches



Box and Lid Cable Clamps can be used on either plugs or receptacles and will not interfere with commonly used hardware. Their hinged construction with snap-lock latches allows easy assembly to a harness. Sufficient Cable Support Gates are supplied with each cable clamp to achieve adjustable clamping over a wide range of cable diameters.

Material and Finish:

Cable Clamp Housing—Thermoplastic, black with textured finish
Gates—Thermoplastic, black

Related Product Data:

Connectors used with:
HDP Metal-Shell—pages 8 & 30
Other accessory capabilities:
Male Screw Retainers—pages 59 & 60
Female Screwlocks—page 61
Locking Posts and Slide Latches—pages 62 & 63
Spring Latches (One Piece)—page 64
Latching Blocks—pages 66 & 67
Technical Documents—pages 114 & 115

Shell Size	Dimensions		Cable Dia. Max. (Ref.)	Cable Clamp Kit No.	
	A	B		Individual	Bulk Packed*
1	.755	.635	.160	748066-1	748066-2
3	1.620	.770	.390	748067-1	748067-2

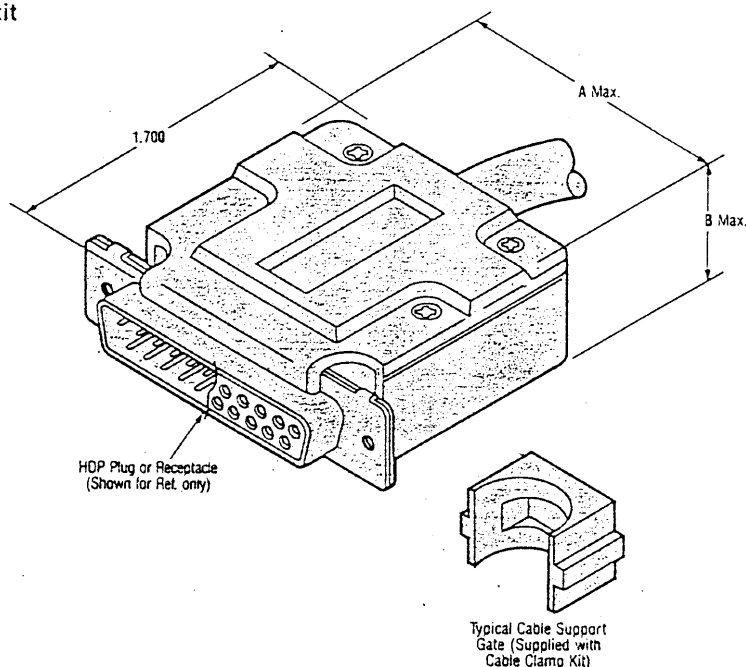
*Each part is individually bulk packed for multiple assembly orders.

- Notes: 1. All parts are packaged unassembled.
2. Cable diameter is adjustable by changing cable support gates. Use the flat side of cable support gates for discrete wire, and the semi-circle side for jacketed cable.

Unshielded Cable Clamps

For drawings, technical data or samples, contact your AMP sales engineer or call the AMP Product Information Center 1-800-522-6752.

Box and Lid
Straight/90° Exit



Box and Lid Cable Clamps can be used on either plugs or receptacles and will not interfere with commonly used hardware. Their hinged construction allows easy assembly to a harness. A wide range of cable diameters are accommodated through the use of cable support gates, supplied with each cable clamp.

Cable clamps are available in kits with appropriate hardware for convenient plug/receptacle mating. See page 51 for kits with Male Screw Retainers and for kits with Spring Latches and Latching Blocks.

Material and Finish:

Cable Clamp Housing—
Thermoplastic, black with textured finish

Gates—Thermoplastic, black
Flat Head Screws—Steel, black zinc plated

Related Product Data:

Connectors used with:
HDP Metal-Shell—pages 8 & 30
Other accessory capabilities:
Male Screw Retainers—
pages 59 & 60
Female Screwlocks—page 61
Locking Posts and Slide Latches—
pages 62 & 63
Spring Latches (One Piece)—
page 64
Latching Blocks—pages 66 & 67

Shell Size	Dimensions		Cable Dia. Max. (Ref.)		Cable Clamp Kit No.	
	A	B	Straight Cable Exit	90° Cable Exit	Individual	Bulk Packed*
1	.755	.635	.160	.160	207467-1	207467-2
2	1.078	.635	.320	.320	207470-1	207470-2
3	1.620	.770	.390	.390	207345-1	207345-2
4	2.268	.770	.640	.405	207473-1	207473-2
5	2.178	.880	.490	.490	207476-1	207476-2

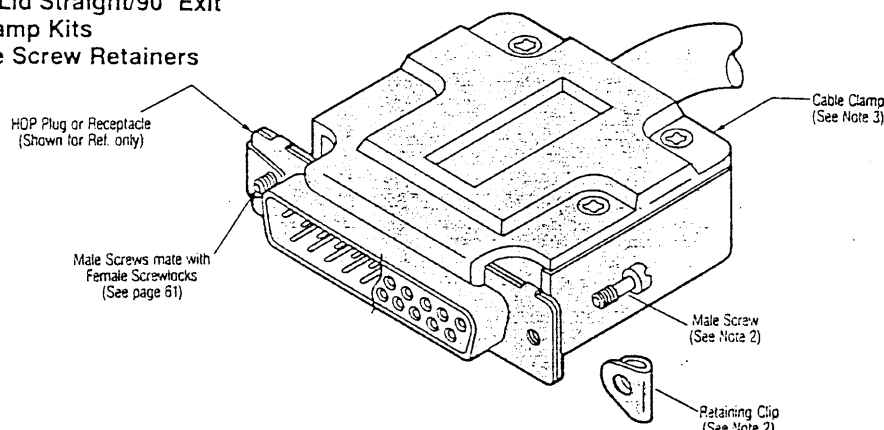
*Each part is individually bulk packed for multiple assembly orders.

- Notes:** 1. All parts are packaged unassembled.
2. Cable diameter is adjustable by changing cable support gates. Use the flat side of cable support gates for discrete wire, and the semi-circle side for jacketed cable.
3. Cable clamp assemblies are available in kits with male screw retainers and with spring latches and latching blocks (page 51).

Unshielded Cable Clamps

For drawings, technical data or samples, contact your AMP sales engineer or call the AMP Product Information Center 1-800-522-6752.

Box and Lid Straight/90° Exit Cable Clamp Kits with Male Screw Retainers



Shell Size	Cable Clamp Kit No.	
	Individual	Bulk Packed*
1	207908-1	207908-2
2	207908-4	207908-5
3	207908-7	207908-8
4	1-207908-0	1-207908-1
5	1-207908-3	1-207908-4

*Each part is individually bulk packed for multiple kit orders.

- Notes: 1. All parts are packaged unassembled.
2. Each kit is comprised of a cable clamp and male screw retainer hardware (2 each). Male screw retainers are also available in kit form, see page 59.
3. For ordering cable clamps separately, refer to page 50.

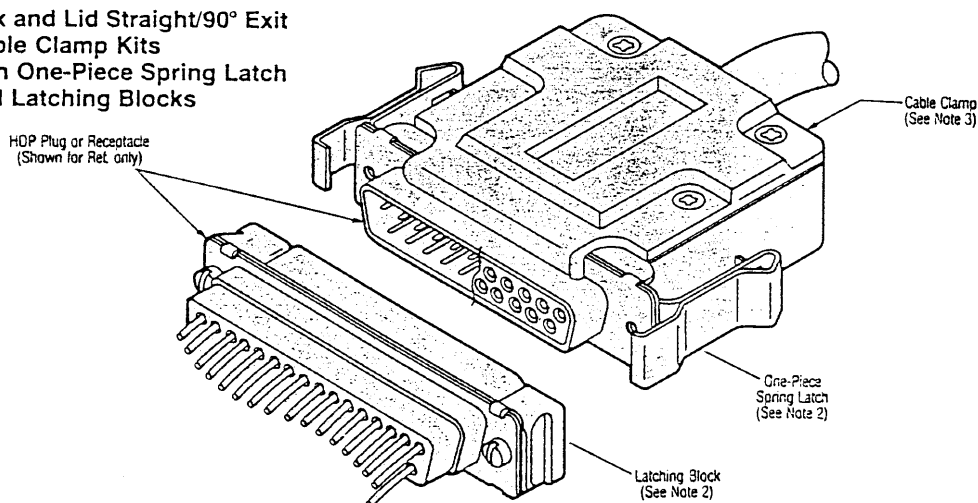
Material and Finish:

Cable Clamp Housing—Thermoplastic, black with textured finish
Gates—Thermoplastic, black
Flat Head Screws—Steel, black zinc plated
Male Screw—Steel, zinc plated yellow chromate
Retaining Clip—Steel, zinc plated yellow chromate

Related Product Data:

Connectors use with:
HDP Metal-Shell—page 8 & 30
Technical Documents—pages 114 & 115

Box and Lid Straight/90° Exit Cable Clamp Kits with One-Piece Spring Latch and Latching Blocks



Shell Size	Cable Clamp Kit No.	
	with Spring Latch	with Spring Latch and Latching Blocks
1	745009-1	745006-1
2	745009-2	745006-2
3	745009-3	745006-3
4	745009-4	745006-4
5	745009-5	745006-5

- Notes: 1. All parts are packaged unassembled.
2. Each kit is comprised of a cable clamp and a one-piece spring latch or combination spring latch and latching blocks (2 each) with slotted pan head metric (M3) screws. One-piece spring latches and latching blocks with slotted pan head metric (M3) screws may be purchased separately, see pages 64, 66 and 67.
3. For ordering cable clamps separately, refer to page 50.

Material and Finish:

Cable Clamp Housing—Thermoplastic, black with textured finish
Gates—Thermoplastic, black
Flat Head Screws—Steel, black zinc plated
Spring Latch—Stainless Steel
Latching Blocks—Zinc
Pan Head Screws—Steel, zinc plated

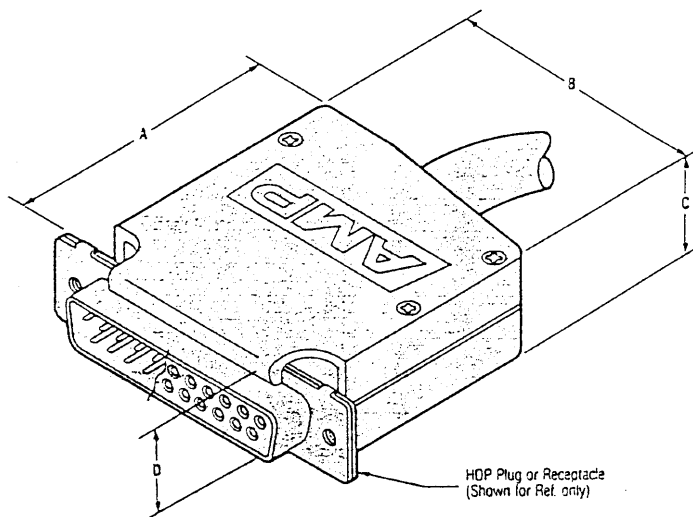
Related Product Data:

Connectors used with:
HDP Metal-Shell—pages 8 & 30
Technical Documents—pages 114 & 115

Unshielded Cable Clamps

For drawings, technical data or samples, contact your AMP sales engineer or call the AMP Product Information Center 1-800-522-6752.

Clam Shell
Straight/45° Exit



Shell Size	Dimensions				Cable Dia. (Max.)	Short Cable Clamp Part No.		Standard Cable Clamp Part No.	
	A	B	C	D		Individual	Bulk Packed*	Individual	Bulk Packed*
1	1.625	.750	.620	.620	.256	—	—	205729-1	205729-3
2	1.250	1.073	.580	.620	.320	206393-1	206393-3	—	—
	1.625	1.073	.620	.620	.320	—	—	205730-1	205730-3
3	1.250	1.615	.580	.620	.420	206390-1	206390-3	—	—
	1.625	1.615	.620	.620	.420	—	—	205718-1	205718-4
4	1.625	2.263	.620	.620	.490	—	—	205731-1	205731-3
5	1.625	2.168	.730	.730	.600	—	—	205732-1	205732-3

*Each part is individually bulk packed for multiple assembly orders.

Notes: 1. All parts are packaged unassembled.

2. Quantity of pan head screws supplied with cable clamp assembly varies with shell size.

3. Cable clamps are available in kits with male screw retainers and with spring latches and latching blocks (page 53).

4. All pan head screws have combination cross-recessed and slotted heads.

Straight/45° Exit Cable clamps can be used on either a plug or receptacle and will not interfere with commonly used hardware, such as Male Screw Retainers, Female Screwlocks or Spring Latches and Latching Blocks. Their hinged construction allows easy assembly to a harness. Also, the straight or 45° angle of cable exit is achieved by merely positioning the Cable Support Gate for the desired angle prior to installing the assembly onto the plug or receptacle.

Cable clamp assemblies are available in kits with appropriate hardware for convenient plug/receptacle mating. See page 53 for kits with Male Screw Retainers and for kits with Spring Latches and Latch Blocks.

Material and Finish:

Cable Clamp Housing—Thermoplastic, black with textured finish

Gates—Thermoplastic, black

Pan Head Screws, 6-32 Set Screw and 6-32 Square Nut—Steel, zinc plated

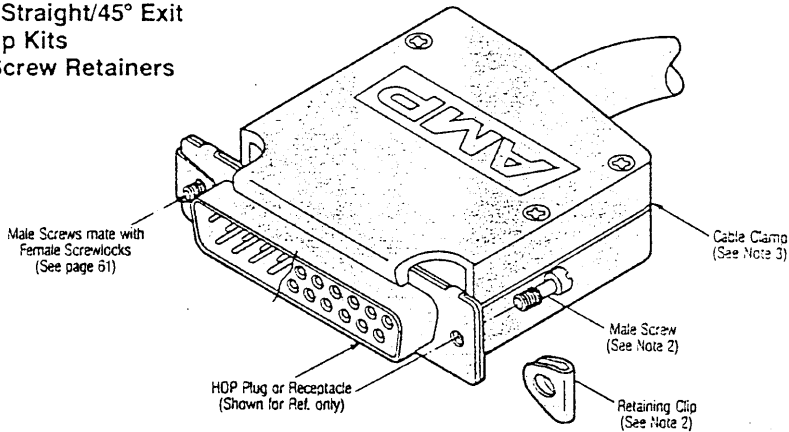
Related Product Data:

Connectors used with:
HDP Metal-Shell—pages 8 & 30
Other accessory capabilities:
Male Screw Retainers—pages 59 & 60
Female Screwlocks—page 61
Locking Posts and Slide Latches—pages 62 & 63
Spring Latch (One-Piece)—page 64
Latching Blocks—pages 66 & 67
Technical Documents—pages 114 & 115

Unshielded Cable Clamps

For drawings, technical data or samples, contact your AMP sales engineer or call the AMP Product Information Center 1-800-522-6752.

Clam Shell Straight/45° Exit Cable Clamp Kits with Male Screw Retainers



Shell Size	Short Cable Clamp Kit No.		Standard Cable Clamp Kit No.	
	Individual	Bulk Packed*	Individual	Bulk Packed*
1	—	—	206478-1	2-206478-0
2	1-206478-1	2-206478-5	206478-2	2-206478-1
3	1-206478-2	2-206478-6	206478-3	2-206478-2
4	—	—	206478-4	2-206478-3
5	—	—	206478-5	2-206478-4

*Each part is individually bulk packed for multiple kit orders.

- Notes: 1. All parts are packaged unassembled.
 2. Each kit is comprised of a cable clamp and male screw retainer hardware (2 each). Male screw retainers are also available in kit form, see page 59.
 3. For ordering cable clamps separately, refer to page 52.

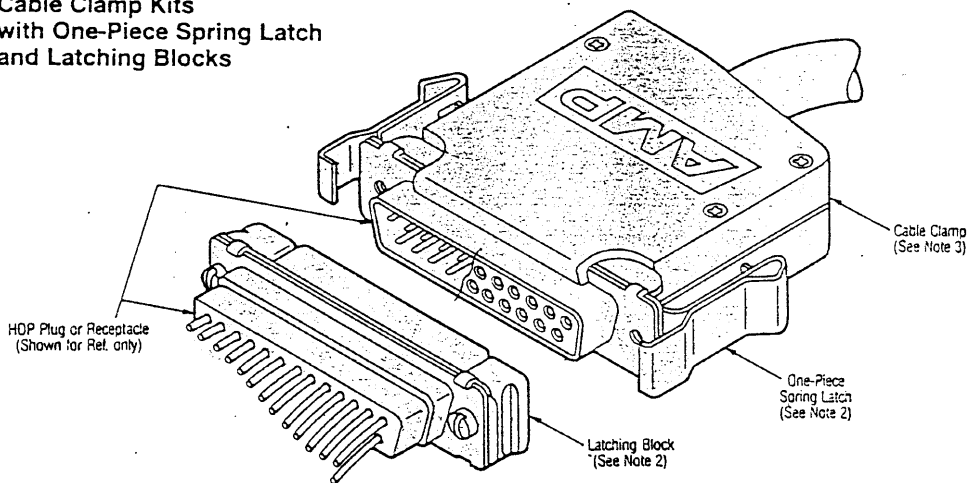
Material and Finish:

Cable Clamp Housing—Thermoplastic, black with textured finish
Gates—Thermoplastic, black
Pan Head Screws, 6-32 Set Screw and 6-32 Square Nut—Steel, zinc plated
Male Screw—Steel, zinc plated yellow chromate
Retaining Clip—Steel, zinc plated yellow chromate

Related Product Data:

Connectors used with:
 HDP Metal-Shell—pages 8 & 30
Technical Documents—pages 114 & 115

Clam Shell Straight/45° Exit Cable Clamp Kits with One-Piece Spring Latch and Latching Blocks



Shell Size	Standard Cable Clamp Kit No.	
	with Spring Latch	with Spring Latch and Latching Blocks
1	745008-1	745005-1
2	745008-2	745005-2
3	745008-3	745005-3
4	745008-4	745005-4
5	745008-5	745005-5

- Notes: 1. All parts are packaged unassembled.
 2. Each kit is comprised of a cable clamp and a one-piece spring latch or combination spring latch and latching blocks (2 each) with slotted pan head metric (M3) screws. One-piece spring latches and latching blocks with slotted pan head metric screws (M3) may be purchased separately, see pages 64, 66 and 67.
 3. For ordering cable clamps separately, refer to page 52.

Material and Finish:

Cable Clamp Housing—Thermoplastic, black with textured finish
Gates—Thermoplastic, black
Pan Head Screws, 6-32 Set Screw and 6-32 Square Nut—Steel, zinc plated
Spring Latch—Stainless steel
Latching Blocks—Zinc
Pan Head Screws—Steel, zinc plated

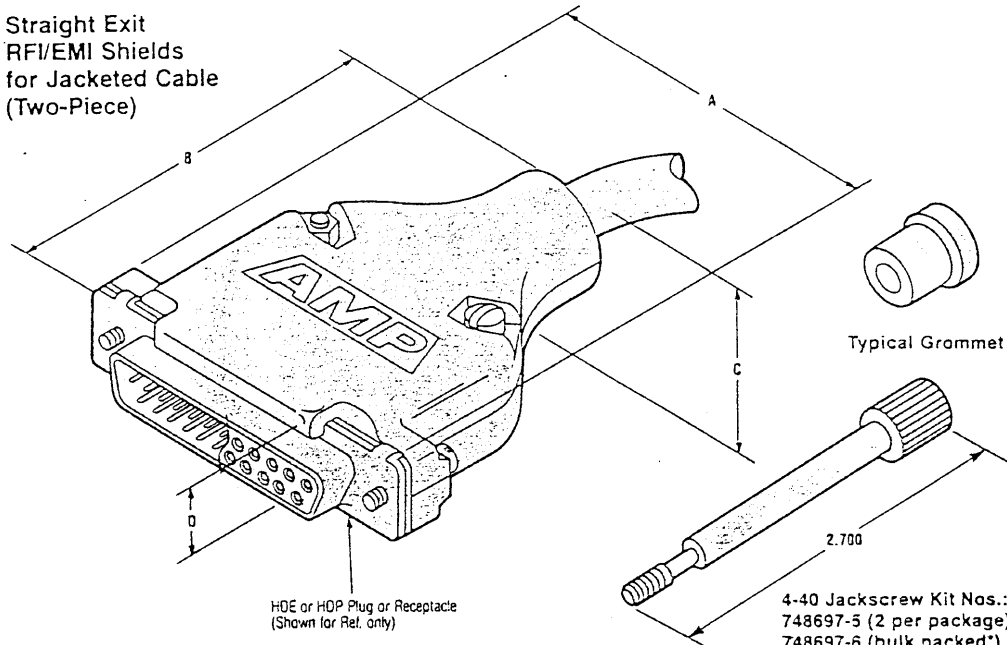
Related Product Data:

Connectors used with:
 HDP Metal-Shell—pages 8 & 30
Technical Documents—pages 114 & 115

Shielded Cable Clamps

For drawings, technical data or samples, contact your AMP sales engineer or call the AMP Product Information Center 1-800-522-6752.

**Straight Exit
RFI/EMI Shields
for Jacketed Cable
(Two-Piece)**



This RFI/EMI shield allows cable to be fully prepared and terminated to the connector before the shield is installed. During installation, the shield of the jacketed cable is folded back and compressed into the cable opening of the RFI/EMI shield. For greater cable support and/or shielding effectiveness, split-ring and crimp ferrules are available (pages 56 and 57).

Material and Finish:

Die Cast Shield—Zinc alloy, plated bright nickel over bright copper

Metal-Plated Plastic Shield—Thermoplastic, plated nickel over copper

Plastic Shield—Black thermoplastic

4-40 Fillister Head Screws and Hex Nuts—Steel, zinc plated

4-40 Mounting Screws—Steel, zinc plated

Jackscrews—Steel, zinc plated clear chromate

Related Product Data:

Ferrules—pages 56 & 57

Connectors used with:
HDE Metal-Shell—page 15
HDP Metal-Shell (Tin plated only)—pages 8 & 30

Other accessory capabilities:
Spring Latch (Two-Piece)—page 64

Technical Documents—pages 114 & 115

Shell Size	Dimensions				Cable O.D. (Max.)	Die Cast Shield Kit Numbers	Metal-Plated Plastic Shield Kit Numbers	Grommet Sets		
	A	B	C	D				Cable O.D. Range	No. of Grommets Per Set	Part Number
1	1.215	1.910	.550	.620	.200	745171-2	745854-5	—	—	—
					.250	745171-1	745854-3	—	—	—
					.370	745171-5	745854-1	.185-.320	4	747746-1
					.225	745172-3	747099-7	—	—	—
2	1.545	1.910	.620	.620	.300	745172-2	747099-5	—	—	—
					.375	745172-1	747099-3	.185-.320	4	747746-1
					.430	1-745172-3	747099-1	—	—	—
					.280	745173-5	745833-9	—	—	—
3	2.090	1.920	.680	.620	.350	745173-4	745833-7	—	—	—
					.430	745173-3	745833-5	—	—	—
					.480	745173-2	745833-3	—	—	—
					.530	745173-1	745833-1	.255-.470	6	747973-1
4	2.738	1.920	.800	.620	.350	745174-5	747100-9	—	—	—
					.425	745174-4	747100-7	—	—	—
					.500	745174-3	747100-5	—	—	—
					.530	2-745174-7	1-747100-1	.255-.470	6	747973-1
5	2.644	1.920	.900	.730	.575	745174-2	747100-3	—	—	—
					.650	745174-1	747100-1	—	—	—
					.375	745175-6	1-747098-1	—	—	—
					.450	745175-5	747098-9	—	—	—
					.525	745175-4	747098-7	.255-.470	6	747973-1
					.600	745175-3	747098-5	—	—	—
					.675	745175-2	747098-3	—	—	—
					.750	745175-1	747098-1	—	—	—

Cable Clamp Kits With Grommets

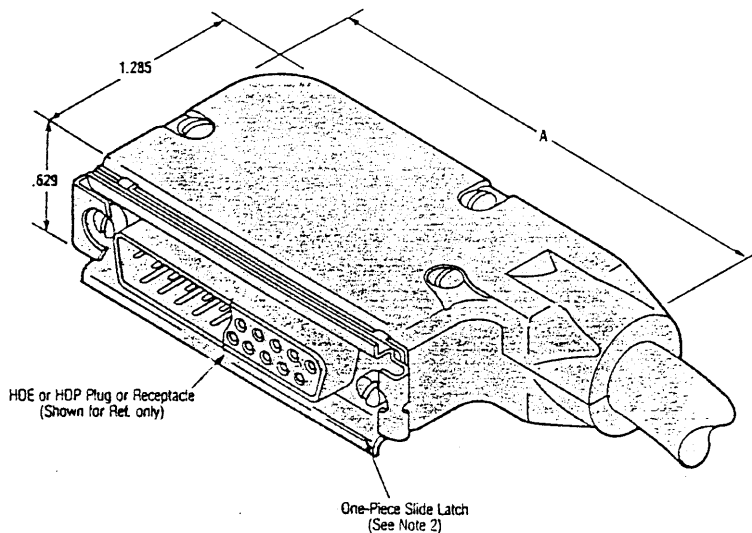
Shell Size	Dimensions				Cable O.D. Range	No. of Grommets Per Set	Kit Numbers		
	A	B	C	D			Die Cast Shield With Grommets	Metal-Plated Plastic Shield With Grommets	Plastic Shield With Grommets
1	1.215	1.910	.550	.620	.185-.320	4	748676-1	748677-1	748678-1
2	1.545	1.910	.620	.620	.185-.320	4	748676-2	748677-2	748678-2
3	2.090	1.920	.680	.620	.255-.470	6	748676-3	748677-3	748678-3
4	2.738	1.920	.800	.620	.255-.470	6	748676-4	748677-4	748678-4
5	2.644	1.920	.900	.730	.255-.470	6	748676-5	748677-5	748678-5

- Notes: 1. All parts are packaged unassembled.
2. Jackscrews must be purchased separately.
3. Split-ring and crimp ferrules are shown on pages 56 and 57.

Shielded Cable Clamps

For drawings, technical data or samples, contact your AMP sales engineer or call the AMP Product Information Center 1-800-522-6752.

90° Exit RFI/EMI Die Cast Shields for Jacketed Cable (Two-Piece)



This RFI/EMI shield allows cable to be fully prepared and terminated to the connector before the shield is installed. During installation, the shield of the jacketed cable is folded back and compressed into the cable opening of the RFI/EMI shield. For greater cable support and/or shielding effectiveness, split-ring and crimp ferrules are available (pages 56 and 57).

Material and Finish:

Shield—Zinc alloy, plated nickel over copper
4-40 Pan Head Screws & Slide Latch Screws—Steel, zinc plated
One-Piece Slide Latch—Stainless steel

Related Product Data:

Ferrules—pages 56 & 57
Connectors used with:
HDE Metal-Shell—page 15
HDP Metal-Shell (Tin plated only)—pages 8 & 30
Technical Documents—pages 114 & 115

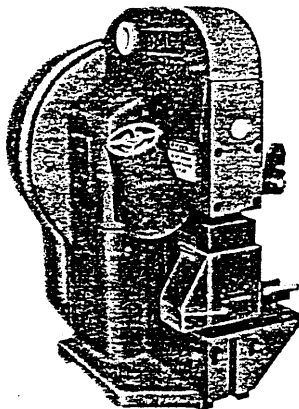
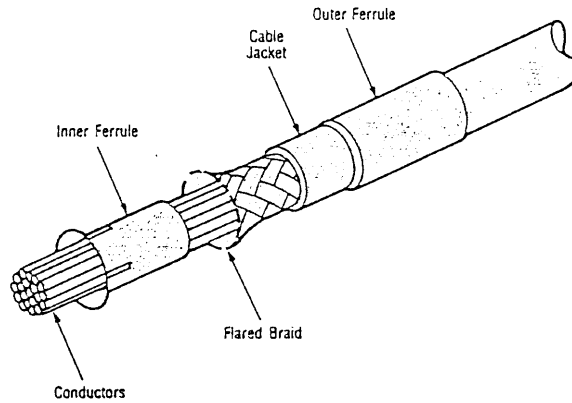
Shell Size	Dimension A	Cable Dia. (Max.)	Shield with Slide Latch Kit Numbers (See Note 2)	Shield without Slide Latch Kit Numbers (See Note 3)
2	2.310	.225	745652-4	745918-4
		.300	745652-3	745918-3
		.375	745652-2	745918-2
		.430	745652-1	745918-1
		.280	745653-5	—
3	2.850	.355	745653-4	—
		.430	745653-3	747194-3
		.480	745653-2	—
		.530	745653-1	—

- Notes: 1. All parts are packaged unassembled.
2. Each kit is comprised of a two-piece shield with three pan head screws and a slide latch with two 4-40 slide latch screws. Slide latches may be purchased separately in kit form, see page 63.
3. Each kit is comprised of a two-piece shield with three pan head screws.
4. Split-ring and crimp ferrules are shown on pages 56 and 57.

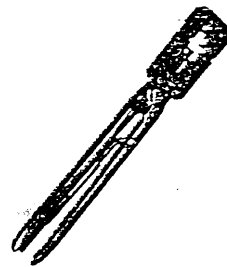
Shielded Cable Clamps

For drawings, technical data or samples, contact your AMP sales engineer or call the AMP Product Information Center 1-800-522-6752.

Crimp Ferrules for Braided Cable Shield



AMP-O-LECTRIC Terminating Machine No. 565435-5, with Applicator No. 812407-1 and Die Set No. 813809-() (See page 57 for dash numbers)



AMP Hand Tool No. 543344-1 (See page 57 for Hand Tool Die Set numbers)

Material and Finish:

Outer Ferrule—Copper, plated .000100 min. tin

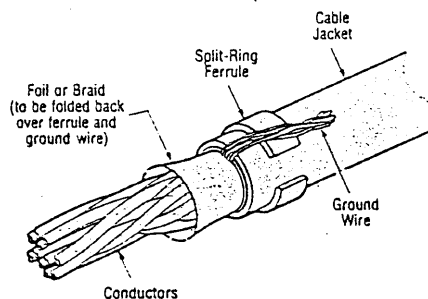
Inner Ferrule—.023 thick brass plated .000050 tin over nickel

Related Product Data:

Shields used with:
Straight Exit—page 54
90° Exit—page 55

Note: Crimp ferrules are for use with braided shields only. Crimp ferrules require application tooling with die sets for attachment to cable.

Split-Ring Ferrules for Foil or Braided Cable Shield



Material:

Aluminum

Related Product Data:

Shields used with:
Straight Exit—page 54
90° Exit—page 55

Note: Split-ring ferrules cannot be used with outer and inner ferrules. Split-ring ferrules are suitable for both foil and braided shields. The ferrules do not require tooling for assembly.

Shielded Cable Clamps

For drawings, technical data or samples, contact your AMP sales engineer or call the AMP Product Information Center 1-800-522-6752.

Crimp and Split-Ring Ferrules

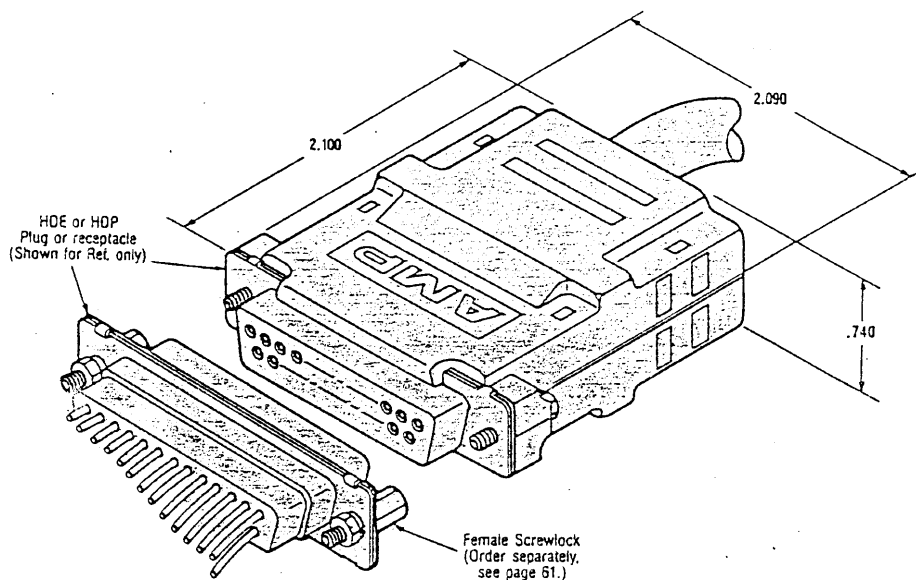
Shell Size	Cable Dia. (Max.)*	When using these Shield Kits				Use these Ferrules				
		Straight Exit Shield Kit No.		90° Exit Die Cast Shield Kit No.		Split-Ring Ferrule No.	Crimp Ferrule No. and Tooling No.			
		Die Cast	Metal-Plated Plastic	With Slide Latch	Without Slide Latch		Inner	Outer	Hand Tool Die Set	Applicator Die Set
1	.200	745171-2	745854-5	—	—	745508-2	—	—	—	—
	.240	745171-5	745854-1	—	—	—	1-745129-8	745130-8	543013-2	813809-1
	.240	745171-1	745854-3	—	—	745508-3	1-745129-6	745130-8	543013-1	813809-1
	.280	745171-5	745854-1	—	—	—	3-745129-4	1-745130-6	1-543013-7	813809-7
	.370	745171-5	745854-1	—	—	745508-6	1-745129-7	1-745130-0	543013-6	813809-5
2	.225	745172-3	747099-7	745652-4	745918-4	745508-3	—	—	—	—
	.240	745172-1	747099-3	745652-2	745918-2	—	1-745129-8	745130-8	543013-2	813809-1
	.240	1-745172-3	747099-1	745652-1	745918-1	—	2-745129-1	745130-8	543013-3	813809-1
	.280	1-745172-3	747099-1	745652-1	745918-1	—	3-745129-2	1-745130-6	1-543013-6	813809-7
	.300	745172-2	747099-5	745652-3	745918-3	745508-4	—	—	—	—
	.350	1-745172-3	747099-1	745652-1	745918-1	—	2-745129-0	745130-9	543013-4	813809-2
	.365	745172-1	747099-3	745652-2	745918-2	—	1-745129-7	1-745130-0	543013-6	813809-5
	.375	745172-1	747099-3	745652-2	745918-2	745508-6	—	—	—	—
	.430	1-745172-3	747099-1	745652-1	745918-1	745508-1	1-745129-9	1-745130-1	543013-7	813809-3
	.240	745173-3	745833-5	745653-3	747194-3	—	2-745129-1	745130-8	543013-3	813809-1
3	.280	745173-5	745833-9	745653-5	—	745508-4	—	—	—	—
	.280	745173-3	745833-5	745653-3	747194-3	—	3-745129-2	1-745130-6	1-543013-6	813809-7
	.350	745173-4	745833-7	745653-4	—	745508-5	—	—	—	—
	.350	745173-3	745833-5	745653-3	747194-3	—	2-745129-0	745130-9	543013-4	813809-2
	.350	745173-1	745833-1	745653-1	—	—	2-745129-4	745130-9	543013-5	813809-2
	.430	745173-3	745833-5	745653-3	747194-3	745508-1	1-745129-9	1-745130-1	543013-7	813809-3
	.430	745173-1	745833-1	745653-1	—	—	2-745129-3	1-745130-1	543013-8	813809-3
	.480	745173-2	745833-3	745653-2	—	745508-8	—	—	—	—
	.530	745173-1	745833-1	745653-1	—	745508-9	2-745129-2	1-745130-2	1-543013-0	813809-4
	.240	745174-4	747100-7	—	—	—	2-745129-1	745130-8	543013-3	813809-1
4	.280	745174-4	747100-7	—	—	—	3-745129-2	1-745130-6	1-543013-6	813809-7
	.350	745174-5	747100-9	—	—	745508-5	—	—	—	—
	.350	745174-4	747100-7	—	—	—	2-745129-0	745130-9	543013-4	813809-2
	.430	745174-4	747100-7	—	—	745508-1	1-745129-9	1-745130-1	543013-7	813809-3
	.430	745174-1	747100-1	—	—	—	2-745129-7	1-745130-1	543013-9	813809-3
	.500	745174-3	747100-5	—	—	745508-8	—	—	—	—
	.525	745174-1	747100-1	—	—	—	2-745129-6	1-745130-2	1-543013-1	813809-4
	.575	745174-2	747100-3	—	—	1-745508-0	—	—	—	—
	.650	745174-1	747100-1	—	—	1-745508-1	2-745129-5	1-745130-3	1-543013-3	813809-6
	.240	745175-6	1-747098-1	—	—	—	1-745129-8	745130-8	543013-2	813809-1
5	.350	745175-4	747098-7	—	—	—	2-745129-4	745130-9	543013-5	813809-2
	.365	745175-6	1-747098-1	—	—	—	1-745129-7	1-745130-0	543013-6	813809-5
	.375	745175-6	1-747098-1	—	—	745508-6	—	—	—	—
	.430	745175-4	747098-7	—	—	—	2-745129-3	1-745130-1	543013-8	813809-3
	.450	745175-5	747098-9	—	—	745508-7	—	—	—	—
	.525	745175-4	747098-7	—	—	745508-9	—	—	—	—
	.530	745175-4	747098-7	—	—	—	2-745129-2	1-745130-2	1-543013-0	813809-4
	.530	745175-1	747098-1	—	—	—	3-745129-0	1-745130-2	1-543013-2	813809-4
	.600	745175-3	747098-5	—	—	1-745508-0	—	—	—	—
	.650	745175-1	747098-1	—	—	—	2-745129-9	1-745130-3	1-543013-4	813809-6
	.675	745175-2	747098-3	—	—	1-745508-1	—	—	—	—
	.750	745175-1	747098-1	—	—	1-745508-2	2-745129-8	1-745130-4	1-543013-5	813809-8

*For split-ring ferrules, Min. O.D. is .040 smaller than Max. O.D. For inner and outer ferrules, Min. O.D. is .050 smaller than Max. O.D. At the Max. cable O.D. the Min. insulation thickness is .060.

Shielded Cable Clamps

For drawings, technical data or samples, contact your AMP sales engineer or call the AMP Product Information Center 1-800-522-6752.

Universal Cable Clamp For Jacketed Cable



For Shell Size 3
Individual Kit No. - 748665-1
Bulk Packed Kit No. - 748665-2*

*Each part is individually bulk packed for multiple assembly orders.

- Notes: 1. All parts are packaged unassembled.
2. Each kit is comprised of two cable clamp halves, two cable clamp wedge sets, one braid termination clamp set and two mounting screws.

Material and Finish:

- Cable Clamp Housing—
Thermoplastic, plated nickel over copper
- Cable Clamp Wedge Set—
Thermoplastic, black
- Braid Termination Clamp Set—
Thermoplastic, plated nickel over copper
- 4-40 Mounting Screws—
Steel, zinc plated

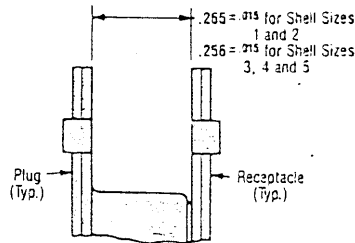
Related Product Data:

- Connectors used with:
HDE Metal-Shell—page 15
HDP Metal-Shell (Tin plated only)—pages 8 & 30
- Other accessory capabilities:
Spring Latches (Two Piece)—
page 64
- Technical Documents—
pages 114 & 115

Plug/Receptacle Mating and Panel Mounting Specifications

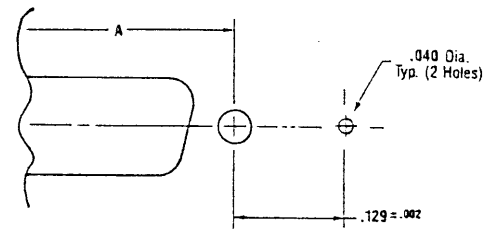
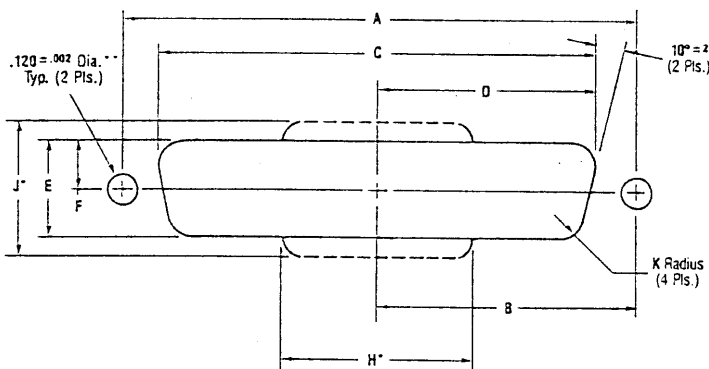
For drawings, technical data or samples, contact your AMP sales engineer or call the AMP Product Information Center 1-800-522-6752.

Plug/Receptacle Mating



The .265 and .256 dimensions are required to assure full mating of connector halves. These dimensions must be taken into consideration when determining the method of mounting, panel thickness, etc.

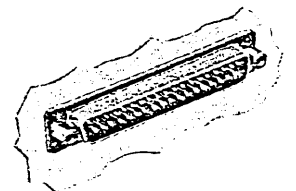
Panel Mounting



Cutout for Rear Mount and Short Latching Block

Shell Size	Mounting Method Front/Rear Panel	Dimensions								
		A	B	C	D	E	F	H*	J*	K
1	Front	.984	.492	.874	.437	.513	.257	—	—	.083
	Rear	.984	.492	.806	.403	.449	.225	.300	.635	.132
2	Front	1.312	.656	1.102	.601	.513	.257	—	—	.083
	Rear	1.312	.656	1.134	.567	.449	.225	.623	.635	.132
3	Front	1.852	.926	1.743	.872	.513	.257	—	—	.083
	Rear	1.852	.926	1.674	.837	.449	.225	1.165	.635	.132
4	Front	2.500	1.250	2.391	1.196	.513	.257	—	—	.083
	Rear	2.500	1.250	2.326	1.163	.449	.225	1.813	.635	.132
5	Front	2.406	1.203	2.297	1.149	.623	.312	—	—	.083
	Rear	2.406	1.203	2.218	1.109	.555	.278	1.718	.745	.132

Most plugs and receptacles can be mounted to a panel from either the front or rear, using a variety of accessory hardware. Posted receptacles are rear panel mounted only. Typical examples are shown below.



Typical Front-Panel Mounted Subminiature D Plug



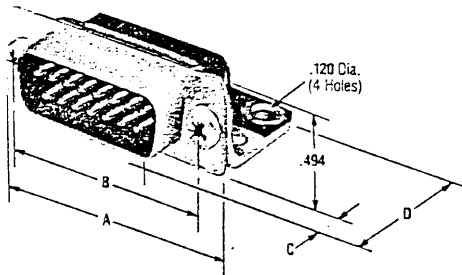
Typical Rear-Panel Mounted Subminiature D Receptacle

*Panel cutout configuration with H and J dimensions provides clearance for mounting connectors with cable clamps.
**This dimension is .190 ± .002 when posted connectors with fixed female screwlocks are rear-panel mounted.

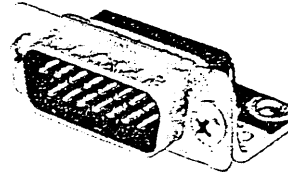
HD-20 Full Metal-Shell Right-Angle Posted Connectors 454 Mount

For drawings, technical data or samples, contact your AMP sales engineer or call the AMP Product Information Center 1-800-522-6752.

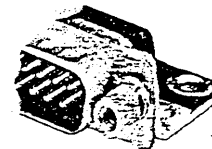
Plugs



Without Grounding Indents

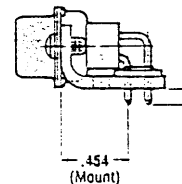
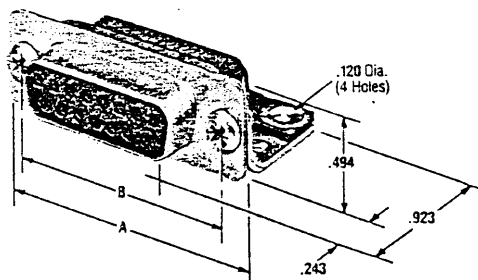


With Grounding Indents



Available with preassembled 4-40 Female Screwlocks, consult AMP Incorporated.

Receptacles



Post Size—.025 Sq.

Material and Finish:

Shell—Steel, tin plated

Insert—94V-0 rated thermoplastic, black

Female Screwlock—Steel, zinc plated

Contacts (Posted):

Pin—Brass

Socket—Phosphor bronze

Contact Plating:

A—Gold flash over .000050 nickel on entire contact, with additional .000030 gold on mating end

B—Gold flash over .000030 nickel

Related Product Data:

Contact Arrangements—page 4

Performance Characteristics—page 78

Mateable Connectors:

HDE—pages 15-17

HDF—page 25

HDP—pages 30-32

Mating/Panel Mounting—page 110

Pc Board Mounting

Specifications—page 112

Mating Hardware—pages 59-67

Commoning Strip—page 68

Keying Plug—page 68

Plug/Receptacle Adapters—page 74

Connector Savers—pages 76

Technical Documents—pages 114 & 115

Shell Size	No. of Contact Positions	Dimensions					Contact Finish (Plating Code)	Plug Part Numbers		Receptacle Part Numbers
		A	B	C	D	E		Without Grounding Indents	With Grounding Indents	
1	9	1.213	.984	.235	.915	.125	A	745434-6	745434-8	745438-4
							B	745434-5	745434-7	745438-3
						.220	A	—	745434-4	745438-2
							B	745434-1	745434-3	745438-1
2	15	1.541	1.312	.235	.915	.125	A	—	745435-8	745439-4
							B	745435-5	745435-7	745439-3
						.220	A	745435-2	745435-4	745439-2
							B	745435-1	—	745439-1
3	25	2.088	1.852	.230	.919	.125	A	—	745436-8	745440-4
							B	745436-5	745436-7	745440-3
						.220	A	745436-2	745436-4	745440-2
							B	745436-1	745436-3	745440-1
4	37	2.729	2.500	.230	.919	.125	A	—	745437-8	745441-4
							B	—	745437-7	745441-3
						.220	A	745437-2	745437-4	745441-2
							B	745437-1	745437-3	745441-1

Notes: 1. All connectors are preloaded with size 20 DF posted contacts; plugs with pin contacts and receptacles with socket contacts.
2. .125 post length is recommended for pc board thickness of .093 max.; .220 post length is recommended for pc board thickness of .125 max.
3. Male screw retainers (pages 59 & 60) are used as mating hardware for connectors with 4-40 female screwlocks.

Subminiature D HD-22 and HD-20 Cable Connectors

Introduction

Cable connectors come in insulation-displacement, crimp and solder cup versions.

Because of their mass-termination ability, insulation-displacement contacts offer the lowest applied costs. Pressing the wires into slotted-beam contacts displaces the insulation to form a gastight connection on the conductors. No wire stripping or other

preparation is needed, so application is fast and efficient.

Two types of IDC connectors are offered. The HDE series handles discrete wire in the 20 to 30 AWG range. Wire entry is straight into the rear of the connector.

The HDF series mass terminates .050 inch center ribbon cable, accepting wire of 30 AWG solid, 28 AWG solid or stranded and 26 AWG solid or stranded.

To provide a very low profile, wire entry is at right angles. Unlike most cable connectors, which are used externally to the equipment, HDF connectors are used internally to carry signals from a pc board to the skin.

Crimp snap-in contact connectors easily answer any production need by offering the benefits of low applied cost and widely available termination equipment, from hand tools to high-speed automatic

harness makers. Connectors can be selectively loaded, meaning you don't pay for contacts in unused positions. Contacts are available for wire sizes in the 18 to 28 AWG range for HDP-20 connectors and the 22 to 28 AWG range for HDP-22 connectors.

HDP-20 solder cup connectors are preloaded with solder cup contacts. These contacts handle a full range of wire sizes 20 AWG and smaller.

Performance Characteristics

	Connector Type			
	HDP-22	HDE-20	HDF-20	HDP-20
Electrical Characteristics				
Contact Current Rating (One pair of contacts in free air)	22 AWG Wire 5.0 amperes	20 AWG Wire 3 amperes	26 & 28 AWG Stranded, 26, 28 & 30 Solid Wire 1 ampere	20 AWG Wire 7.5 amperes
Termination Resistance	15 milliohms (max.)	10 milliohms (max.)	15 milliohms (max.)	15 milliohms (max.)
Dielectric Withstanding Voltage	1000 VAC min.	1000 VAC min.	500 VAC min.	1000 VAC min.
Insulation Resistance	5000 megohms min.	5000 megohms min.	5000 megohms min.	5000 megohms min.
Mechanical Characteristics				
Contact Insertion Force	3 lb. max.	N/A	N/A	3 lb. max.
Contact Retention	5 lb. min.	7 lb. min.	N/A	10 lb. min.
Contact Engaging Force (Per contact circuit pair)	12 oz. max.	12 oz. max.	12 oz. max.	12 oz. max.
Contact Separation Force (Per contact circuit pair)	.6 oz. min.	.75 oz. min.	9-37 Position .75 oz. min. 50 Position .40 oz. min.	.75 oz. min.
Tensile Strength	22 AWG—12 lb. 24 AWG—8 lb. 26 AWG—4.5 lb. 28 AWG—2.7 lb.	20 AWG—9.5 lb. 22 AWG—6 lb. 24 AWG—4 lb. 26 AWG—2.5 lb. 28 AWG—2.5 lb. 30 AWG—1 lb.	N/A	20 AWG—20 lb. 22 AWG—12 lb. 24 AWG—8 lb. 26 AWG—4.5 lb. 28 AWG—2.7 lb.
Durability	.000030 gold— 500 cycles Gold Flash— 100 cycles	.000030 gold— 500 cycles Gold Flash— 100 cycles	.000030 gold— 500 cycles	.000030 gold— 500 cycles Gold Flash— 100 cycles
Environmental Characteristics				
Vibration	20 G's, 10-2000 Hz	20 G's 10-2000 Hz	Random 23.1 G's rms. max.	20 G's 10-2000 Hz
Physical Shock	50 G's	50 G's	100 G's	50 G's

Subminiature D HD-22 and HD-20 Cable Connectors

Introduction

Cable connectors come in insulation-displacement, crimp and solder cup versions.

Because of their mass-termination ability, insulation-displacement contacts offer the lowest applied costs. Pressing the wires into slotted-beam contacts displaces the insulation to form a gastight connection on the conductors. No wire stripping or other

preparation is needed, so application is fast and efficient.

Two types of IDC connectors are offered. The HDE series handles discrete wire in the 20 to 30 AWG range. Wire entry is straight into the rear of the connector.

The HDF series mass terminates .050 inch center ribbon cable, accepting wire of 30 AWG solid, 28 AWG solid or stranded and 26 AWG solid or stranded.

To provide a very low profile, wire entry is at right angles. Unlike most cable connectors, which are used externally to the equipment, HDF connectors are used internally to carry signals from a pc board to the skin.

Crimp snap-in contact connectors easily answer any production need by offering the benefits of low applied cost and widely available termination equipment, from hand tools to high-speed automatic

harness makers. Connectors can be selectively loaded, meaning you don't pay for contacts in unused positions. Contacts are available for wire sizes in the 18 to 28 AWG range for HDP-20 connectors and the 22 to 28 AWG range for HDP-22 connectors.

HDP-20 solder cup connectors are preloaded with solder cup contacts. These contacts handle a full range of wire sizes 20 AWG and smaller.

Performance Characteristics

	Connector Type			
	HDP-22	HDE-20	HDF-20	HDP-20
Electrical Characteristics				
Contact Current Rating (One pair of contacts in free air)	22 AWG Wire 5.0 amperes	20 AWG Wire 3 amperes	26 & 28 AWG Stranded, 26, 28 & 30 Solid Wire 1 ampere	20 AWG Wire 7.5 amperes
Termination Resistance	15 milliohms (max.)	10 milliohms (max.)	15 milliohms (max.)	15 milliohms (max.)
Dielectric Withstanding Voltage	1000 VAC min.	1000 VAC min.	500 VAC min.	1000 VAC min.
Insulation Resistance	5000 megohms min.	5000 megohms min.	5000 megohms min.	5000 megohms min.
Mechanical Characteristics				
Contact Insertion Force	3 lb. max.	N/A	N/A	3 lb. max.
Contact Retention	5 lb. min.	7 lb. min.	N/A	10 lb. min.
Contact Engaging Force (Per contact circuit pair)	12 oz. max.	12 oz. max.	12 oz. max.	12 oz. max.
Contact Separation Force (Per contact circuit pair)	.6 oz. min.	.75 oz. min.	9-37 Position .75 oz. min. 50 Position .40 oz. min.	.75 oz. min.
Tensile Strength	22 AWG—12 lb. 24 AWG— 8 lb. 26 AWG—4.5 lb. 28 AWG—2.7 lb.	20 AWG—9.5 lb. 22 AWG—6 lb. 24 AWG—4 lb. 26 AWG—2.5 lb. 28 AWG—2.5 lb. 30 AWG—1 lb.	N/A	20 AWG—20 lb. 22 AWG—12 lb. 24 AWG— 8 lb. 26 AWG—4.5 lb. 28 AWG—2.7 lb.
Durability	.000030 gold— 500 cycles Gold Flash— 100 cycles	.000030 gold— 500 cycles Gold Flash— 100 cycles	.000030 gold— 500 cycles	.000030 gold— 500 cycles Gold Flash— 100 cycles
Environmental Characteristics				
Vibration	20 G's, 10-2000 Hz	20 G's 10-2000 Hz	Random 23.1 G's rms. max.	20 G's 10-2000 Hz
Physical Shock	50 G's	50 G's	100 G's	50 G's