

HDP-20 Crimp Snap-In Contact Connectors



Product Selection Guide

Connector				Contacts		
Type	Insert Material	Shell Type Material and Finish	Mounting	Type	Termination	Plating
Plug (pg. 92)	94V-0 Rated Thermoplastic Black	Zinc Plated Steel Without Grounding Indents	.120 Dia. Holes [3.05] Clinch Nut, 4-40 Threads	Pins (pgs. 100, 101)	Crimp Posted	Duplex (.000030 [0.00076] Gold and Tin)
		Tin Plated Steel Without Grounding Indents				Duplex (Gold Flash and Tin)
		Tin Plated Steel With Grounding Indents				Select (.000030 [0.00076] Gold and Gold Flash)
Receptacle (pg. 93)	94V-0 Rated Thermoplastic Black	Zinc Plated Steel	.120 Dia. Holes [3.05] Clinch Nuts, 4-40 Threaded	Sockets (pgs. 100, 101)	Crimp Posted	Duplex (.000030 [0.00076] Gold and Tin)
		Tin Plated Steel				Duplex (Gold Flash and Tin)
						Select (.000030 [0.00076] Gold and Gold Flash)

HDP-20 Crimp Snap-In Contact Connectors (Continued)

Product Facts

- Shell sizes offer wide choice of contact positions—9, 15, 25, 37 and 50
- Lower cost, commercial version of the military approved series
- Tin or zinc plated shells, with or without grounding indents
- Crimp snap-in contacts allows loading of only the number of contacts being used
- Available with shielding hardware and shielding enclosure kits
- Numerous cable clamps and mating hardware options
- Low cost, high performance, precision-formed crimp contacts

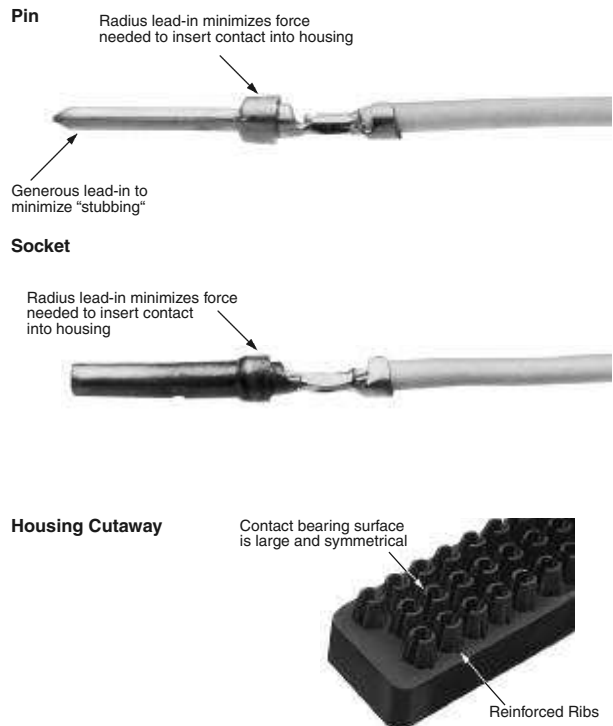
- Machine applied terminations assure highest production rates at lowest applied cost
- Intermateable with any size 20 Subminiature D connector dimensionally complying with MIL-C-24308
- Recognized under the Component Program of Underwriters Laboratories Inc., File No. E28476
- Listed under Underwriters Laboratories Inc., Standard 1863, Communication Circuit Accessories, File No. E81956
- Certified by Canadian Standards Association, File No. LR 1088108 (LR 7189-207)

Section Contents

Plug and Receptacle Connectors 92, 93
 Basic Shielding Hardware Kits 94, 95
 Shielding Hardware Enclosure Kits 96, 97
 Preassembled Shielded Connector Kits 98
 Ferrules for Shielding Hardware Kits 99
 Contacts 100, 101
 Application Tooling 102

Unshielded Cable Clamps	Shielded Cable Clamps and Shielding Hardware and Enclosure Kits	Mounting and Mating Hardware
<p>One-Piece Cable Clamp 180°/120° Quik-Snap (pg. 134)</p> <p>Box and Lid Straight/90° Exit (pg. 137)</p> <p>Box and Lid with Male Screw Retainers (pg. 137)</p> <p>Clam Shell Straight/45° Exit (pg. 138)</p> <p>Clam Shell Straight/45° Exit with Male Screw Retainers (pg. 138)</p>	<p>Straight Exit RFI/EMI Shields for Jacketed Cable (pgs. 139, 142)</p> <p>90° Exit Die Cast RFI/EMI Shields for Jacketed Cable (pg. 142)</p> <p>Basic Shielding Hardware Kits (pgs. 94, 95)</p> <p>Shielding Hardware Enclosure Kits (pgs. 96, 97)</p>	<p>Keying Plug (pg. 155)</p> <p>Male Screw Retainers (pgs. 146, 147)</p> <p>Female Screwlocks (pg. 148)</p> <p>Locking Posts and Slide Latches (pgs. 149, 151)</p> <p>Spring Latch, Two-Piece (pg. 152)</p> <p>Latching Blocks (pgs. 153, 154)</p> <p>Standoff Bushings (pg. 155)</p>

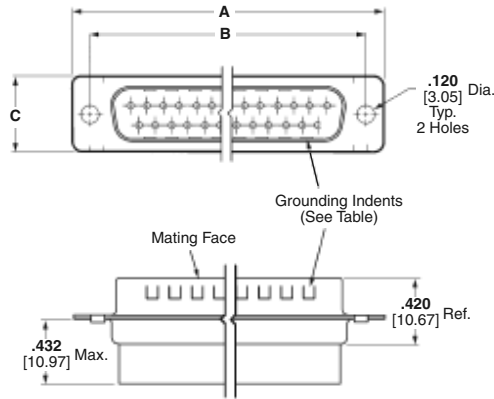
Contact Retention Features



HDP-20 Crimp Snap-In Contact Connectors (Continued)



Plug



Material and Finish:

Shell—Steel, zinc or tin plated
Insert—94V-0 rated thermoplastic, black

Mounting Holes:

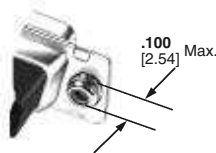
Standard—.120 [3.05] Dia.
Clinch Nut—4-40 threads with self-locking feature

Related Product Data:

- Contact Arrangements**—page 40
- Performance Characteristics**—page 41
- Contacts**—pages 100, 101
- Application Tooling**—page 102
- Mateable Connectors:**
- HDE**—pages 110-123
- HDP**—pages 90-102
- HD-20 Board Mount**—pages 54-71, 78-85, 87-89
- Mating/Panel Mounting**—page 42
- Cable Clamps**—pages 132, 133, 135-137, 140, 141, 144, 145
- Mating Hardware**—pages 146-150, 153, 155

Technical Documents:

- Product Specification**—108-40005
- Application Specifications**—114-10000, 114-40030

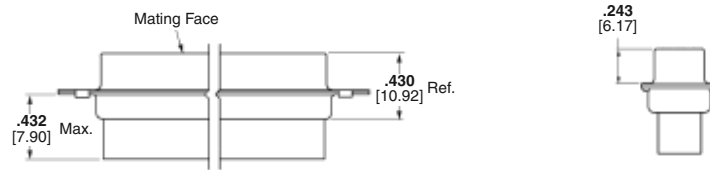
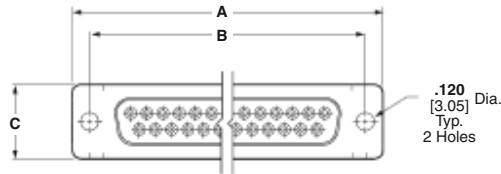


Clinch Nut
(Plug and Receptacle)

Note: Instruction Sheets for TE Tooling are packaged with the tooling. For additional information call the Tooling Assistance Center: **1-800-722-1111**.

HDP-20 Crimp Snap-In Contact Connectors (Continued)

Receptacle



Shell Size	No. of Contact Positions	Dimensions			Insert Material	Mounting Method	Plug Part Numbers			Receptacle Part Nos.	
		A	B	C			Zinc Plated Shell	Tin Plated Shell		Zinc Plated Shell	Tin Plated Shell
								Without Grounding Indents	With Grounding Indents		
1	9	1.213 30.81	.984 24.99	.494 12.55	94V-0	Standard	205204-9	205204-8	205204-4	205203-8	205203-3
						Clinch Nut	—	1658642-2	1658642-1	—	1658643-1
2	15	1.541 39.14	1.312 33.33	.494 12.55	94V-0	Standard	205206-9	205206-8	205206-3	205205-7	205205-2
						Clinch Nut	—	—	5745908-2	—	1658644-1
3	25	2.088 53.04	1.852 47.04	.494 12.55	94V-0	Standard	5205208-1	207464-7	207464-2	5205207-1	207463-1
						Clinch Nut	—	—	5745036-2	207516-6	207516-5
4	37	2.729 69.32	2.500 63.50	.494 12.55	94V-0	Standard	205210-8	205210-7	205210-3	205209-7	205209-2
						Clinch Nut	—	—	745135-4	—	5207661-3
5	50	2.635 66.93	2.406 61.11	.605 15.37	94V-0	Standard	1658641-3	1658641-1	1658641-2	1658640-2	1658640-1
						Clinch Nut	—	—	5745883-2	—	5745884-1

Note: Plugs accept size 20 DF pin contacts and receptacles accept size 20 DF socket contacts.



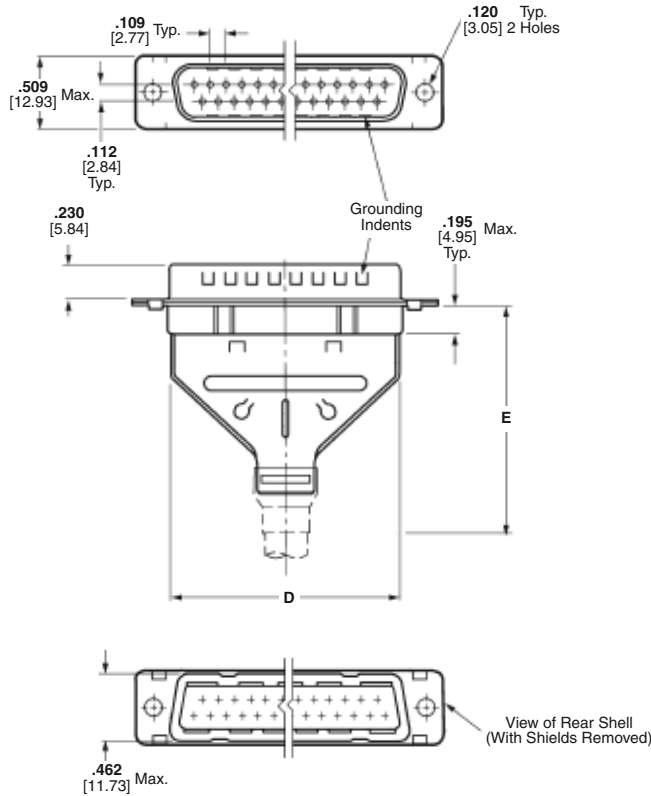
Clinch Nut
(Plug and Receptacle)

Note: Instruction Sheets for TE Tooling are packaged with the tooling. For additional information call the Tooling Assistance Center: **1-800-722-1111**.

Note: All part numbers are RoHS compliant.

HDP-20 Basic Shielding Hardware Kits

Plug



Each kit contains:

- Connector
- Inner shield
- Outer shield

Contacts and ferrules must be purchased separately.

Material and Finish:

Connector Shells—Steel, tin plated

Connector Insert—94V-0 rated thermoplastic, black

Shield—Steel, tin plated

Related Product Data:

Contact Arrangements—page 40

Performance Characteristics—page 41

Contacts—pages 100, 101

Application Tooling—page 102

Mateable Connectors:

HDE—pages 110-123

HDP—pages 90-102

HD-20 Board Mount—pages 54-71, 78-85, 87-89

Mating/Panel Mounting—page 42

Mating Hardware—pages 146-150, 153, 155

Ferrules—page 99

Technical Documents:

Product Specifications—108-40005
108-40030

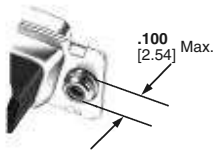
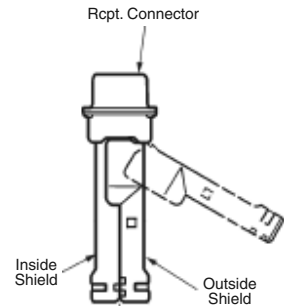
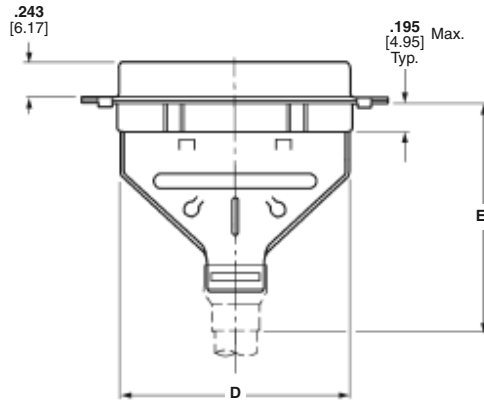
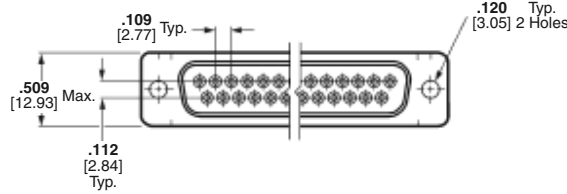
Application Specifications—114-10000
114-40030

Instruction Sheet—408-9010

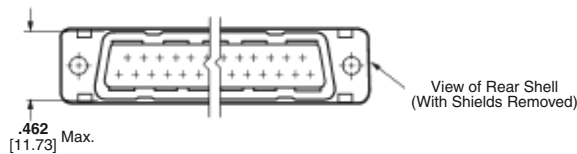
Note: Instruction Sheets for TE Tooling are packaged with the tooling. For additional information call the Tooling Assistance Center: **1-800-722-1111**.

HDP-20 Basic Shielding Hardware Kits (Continued)

Receptacle



Clinch Nut
(Plug and Receptacle)



Ferrule (Must Be Purchased Separately)

Shell Size	No. of Contact Positions	Dimensions		Recommended Cable Outer Dia. Range	Max. Inner Cable Bundle Dia.†	Mounting Method	Plug Kit Numbers	Receptacle Kit Numbers
		D	E					
1	9	.700	1.535	.165-.455 4.19-11.56	.350 8.89	Standard	1658645-1	1658646-1
		17.78	38.99			Clinch Nut	5748526-1	5748536-1
2	15	1.024	1.535	.165-.455 4.19-11.56	.350 8.89	Standard	1658647-1	5747539-1
		26.01	38.99			Clinch Nut	5750636-1	5787908-1
3	25	1.576	1.535	.165-.455 4.16-11.56	.350 8.89	Standard	1658648-1	1658649-1
		40.03	38.99			Clinch Nut	—	1658662-1
4	37	2.215	1.892	.338-.562 8.59-14.28	.450 11.43	Standard	1658650-1	1658651-1
		56.26	48.06			Clinch Nut	5786929-1	—
5	50	2.120	1.876	.338-.480 8.59-12.19	.450 11.43	Standard	1658652-1	1658653-1
		53.85	47.65					

Notes: 1. Plugs accept size 20 DF pin contacts and receptacles accept size 20 DF socket contacts.
2. Components of the kits are shipped unassembled and bulk-packaged in quantities of 100 pieces.
†Maximum cable diameter after jacket and braid removed.

Note: All part numbers are RoHS compliant.

HDP-20 Shielding Hardware Enclosure Kits

Plug



Each Kit Contains:

- Connector
- Inner shield
- Outer shield
- Enclosure
- Two jackscrews

Contacts and ferrules must be purchased separately.

Material and Finish:

Connector Shells—Steel, tin plated.

Connector Insert—94V-0 rated thermoplastic, black

Shield—Steel, tin plated

Enclosure—PVC, black

Jackscrews—Zinc alloy

Related Product Data:

Contact Arrangements—page 40

Performance Characteristics—page 41

Contacts—pages 100, 101

Application Tooling—page 102

Mateable Connectors:

HDE—pages 110-123

HDP—pages 90-102

HD-20 Board Mount—pages 54-71, 78-85, 87-89

Mating/Panel Mounting—page 42

Mating Hardware—pages 146-150, 153, 155

Ferrules—page 99

Technical Documents:

Product Specifications—

108-40005

108-40030

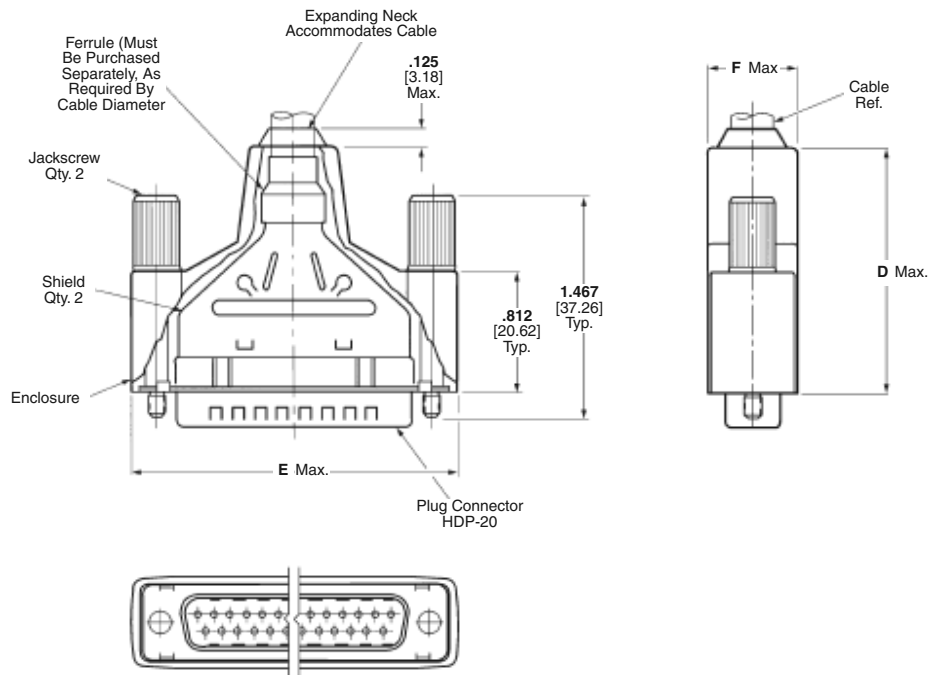
Application Specifications—

114-10000

114-40030

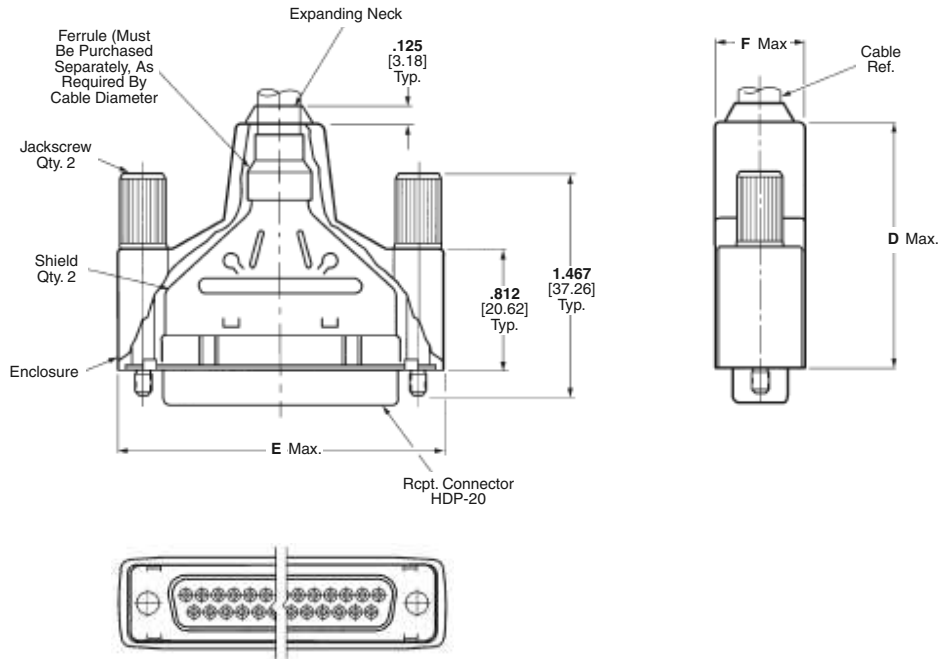
Instruction Sheet—408-9172

Note: Instruction Sheets for TE Tooling are packaged with the tooling. For additional information call the Tooling Assistance Center: **1-800-722-1111**.



HDP-20 Shielding Hardware Enclosure Kits (Continued)

Receptacle



Cable Connectors

Shell Size	No. of Contact Positions	Dimensions			Recommended Cable Outer Diameter Range	Max. Inner Cable Bundle Dia.†	Insert Material	Kit Numbers		Shielding Enclosure Expansion Tool	
		D	E	F				Plug	Receptacle	Cable O.D. (Max.)	Part Number
1	9	1.660 42.16	1.355 34.42	.630 16.00	.190-.330 4.83-8.38	.330 8.38	94V-0	1658655-1	1658654-1	.330 8.38	58241-4
2	15	1.660 42.16	1.685 42.80	.630 16.00	.190-.330 4.83-8.38	.330 8.38	94V-0	1658657-1	1658656-1		
3	25	1.660 42.16	2.210 56.13	.630 16.00	.217-.435 5.51-11.05	.350 8.89	94V-0	1658659-1	1658658-1	.450 11.43	58241-1
4	37	2.010 51.05	2.865 72.77	.730 18.54	.338-.562 8.59-14.28	.450 11.43	94V-0	5747958-1	1658660-1	.572 14.52	58241-2
5	50	2.010 51.05	2.775 70.49	.730 18.54	.338-.562 8.59-14.28	.450 11.43	94V-0	1658661-1	5747959-1		

Notes: 1. Plugs accept size 20 DF pin contacts and receptacles accept size 20 DF socket contacts.
 2. Components of the kits are shipped unassembled and bulk-packaged in quantities of 100 pieces.
 †Maximum cable diameter after jacket and braid removed.

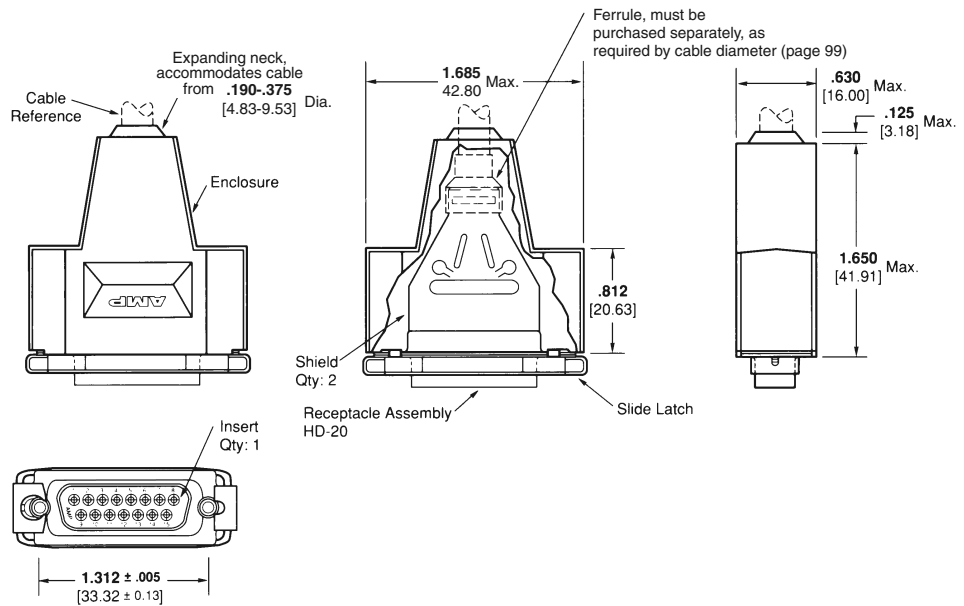
Note: All part numbers are RoHS compliant.

Shielded Connector, Preassembled Kit

Designed to meet the requirements of Local Area Networking, this Subminiature D Shielded Connector Kit is available with slide latches attached to the receptacle. The receptacle is shielded and covered with a durable plastic enclosure. This shielding decreases emissions and provides an effective EMI/RFI barrier.

Preassembled connector kits are available in Subminiature D, shell size 2, 15-position configuration and accept crimp, snap-in HD-20 contacts. Contacts are available separately and allow for selective positioning.

Other sizes and styles can be made available, consult TE.



Receptacle
Part No. 749246-1

Material and Finish:

Inserts—94V-0 rated nylon, black

Enclosures—Elastomer, styrene polyolefin, or PVC, black

Shields and Shells—Carbon steel per ASTM A109, plated with .000200 [0.00508] min. tin over .000050 [0.00127] min. copper

Note: Instruction Sheets for TE Tooling are packaged with the tooling. For additional information call the Tooling Assistance Center: **1-800-722-1111**.

Related Product Data:

Contact Arrangements—page 40

Performance Characteristics—page 41

Contacts—pages 100, 101

Application Tooling—page 102

Ferrules—page 99

Technical Documents:

Product Specifications—108-40005, 108-40030, 108-40032

Application Specifications—114-10000 & 114-40030

Note: All part numbers are RoHS compliant.

HDP-20 Ferrules for Shielding Hardware Kits

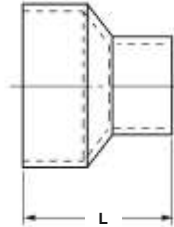
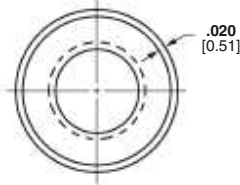
Ferrules for Shielding Hardware Kits



Stepped



Straight



Material and Finish:

Steel (annealed), tin plated

Related Product Data:

Shielding Hardware and Enclosure Kits—pages 94-98

Technical Documents:

Instruction Sheets—
408-9507
408-9508
408-9243
408-9242

Note: Instruction Sheets for TE Tooling are packaged with the tooling. For additional information call the Tooling Assistance Center: **1-800-722-1111**.

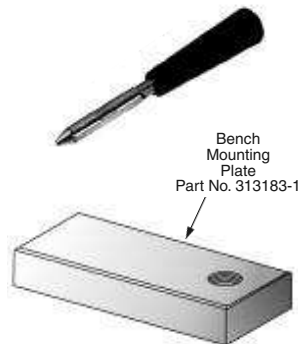
Shell Sizes	Style	L Dim.	Cable Diameter	Part Numbers	
				Ferrule	Die Sets*
1-3	Stepped	.440 11.18	.165-.190 4.19-4.83	3-747579-0	543424-3
1-3	Stepped	.440 11.18	.190-.217 4.83-5.51	3-747579-0	543424-2
1-3	Stepped	.440 11.18	.217-.246 5.51-6.25	3-747579-0	543424-8
1-3	Stepped	.440 11.18	.246-.284 6.25-7.21	3-747579-2	543424-1
1-3	Stepped	.440 11.18	.284-.324 7.21-8.23	3-747579-2	543424-7
1-3	Stepped	.440 11.18	.324-.375 8.23-9.53	3-747579-4	543424-6
1-3	Straight	.440 11.18	.375-.437 9.53-11.10	2-747579-7	543424-5
1-3	Straight	.440 11.18	.400-.460 10.16-11.56	3-747579-6	543424-4
4-5	Stepped	.625 15.88	.230-.265 5.84-6.73	2-747580-4	543425-2
4-5	Stepped	.625 15.88	.338-.385 8.59-9.78	2-747580-3	543425-1
4-5	Stepped	.625 15.88	.375-.432 9.53-10.97	2-747580-1	58238-1
4-5	Stepped	.625 15.88	.422-.490 10.72-12.45	3-747580-1	58237-2
4-5	Straight	.625 15.88	.480-.562 12.19-14.28	2-747580-2	58237-1

*Die sets used with Hand Crimping Tool Part No. 543344-1 or Pneumatic Bench Tool Part No. 312522-3 equipped with Die Set Holder Part No. 58449-1.

Application Tooling for Shielding Hardware Kits



Hand Crimping Tool
No. 543344-1
(Requires Die Sets, see table above.)



Shielding Enclosure Expansion Tools
Part No. 58241-1 (.450 [11.43])†
58241-2 (.572 [14.53])†
58241-4 (.330 [8.38])†
†Maximum Cable Diameter (Instruction Sheet—408-9172)

Pneumatic Bench Tool
No. 312522-3
(Requires Die Set Holder No. 58449-1.)



Note: All part numbers are RoHS compliant.

HDP-20 Connector Contacts, Precision Formed

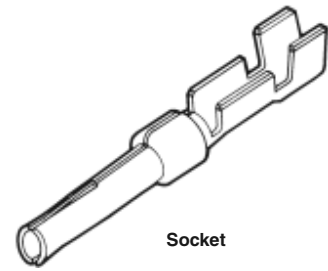
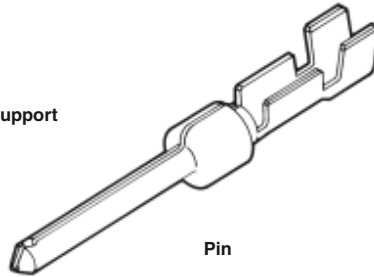
Contact Size 20 DF
Pin Diameter .040 [1.02]

Material and Finish:

- Pin**—Brass
- Socket**—Phosphor bronze
- Plated**
- A**—Select—Gold flash over nickel on entire contact, with additional .000030 [0.00076] gold on mating end
- B**—Duplex—.000030 [0.00076] gold on mating end, tin on termination end, with entire contact nickel underplated
- C**—Gold flash over nickel on entire contact
- D**—Duplex—Gold flash on mating end, tin on termination end, with entire contact nickel underplated

Crimp Snap-In Contacts

With Insulation Support



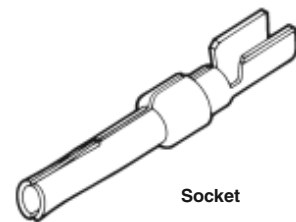
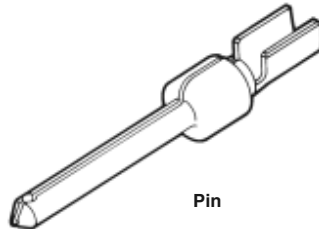
Wire Size Range AWG [mm²]	Ins. Dia. Max.	Contact Finish (Plating Code)	Contact Part Numbers				Hand Tools for Loose Form Contacts		
			Pin		Socket		PRO-CRIMPER II Hand Tool	CERTI-CRIMP II Hand Tool (Color Code)	Applicators* for Strip Form Contacts
			Strip Form	Loose Form	Strip Form	Loose Form			
28-24 0.08-0.2	.040 1.02	A	66507-3	66507-9	66505-3	66505-9	58448-2	91503-1 (Blue Dot)	466423-4** 466901-1***
		B	1658540-4	1658540-5	1658538-2	—			
		C	66507-4	1-66507-0	66505-4	1-66505-0			
		D	1658540-1	1658540-2	1658538-3	1658538-1			
	.060 1.52	A	66682-2	66682-4	66683-2	66683-4	—	91549-1 (Black Dot)	466963-1***
		B	5066682-9	—	1-5066683-0	—			
		D	5066682-6	—	5066683-7	—			
		A	745254-2	745254-6	745253-2	745253-6			
26-22 0.15-0.4	.040 1.27	B	1658544-2	1658544-1	1658543-2	1658543-1	—	91525-1 (Yellow Dot)	466968-1***
		C	745254-3	745254-7	745253-3	745253-7			
		D	1658544-3	—	1658543-3	—			
		A	66506-3	66506-9	66504-3	66504-9			
24-20 0.2-0.6	.060 1.52	B	1658539-1	1658539-3	1658537-3	1658537-4	58448-2	91503-1 (Red Dot)	466422-4** 466900-1***
		C	66506-4	1-66506-0	66504-4	1-66504-0			
		D	1658539-2	1658539-4	1658537-1	1658537-2			
		A	66506-3	66506-9	66504-3	66504-9			

*For Part Nos. of Special Applicators and Applicators for other model machines, call the TE Tooling Assistance Center at 1-800-722-1111.

**For use with AMP-O-LECTRIC Model "G" Terminating Machine.

***For use with AMP-O-MATIC Model II Stripper-Crimper Machine.

Without Insulation Support



Wire Size Range AWG [mm²]	Ins. Dia. Max.	Contact Finish (Plating Code)	Contact Part Numbers		Hand Tools for Loose Form Contacts	
			Pin	Socket	CERTI-CRIMP II Hand Tool (Color Code)	Applicators* for Strip Form Contacts
			Strip Form	Strip Form		
28-24 0.08-0.2	.068 1.73	A	205310-2	205311-3	91548-1 (Blue Dot)	466903-1***
		B	205202-2	205201-3		
		C	205202-6	205201-6		
24-20 0.2-0.6	.068 1.73	A	745229-2	745230-2	91548-1 (Red Dot)	466902-1***
		B	1658541-1	1658542-2		
		C	745229-5	745230-5		
		D	—	1658542-1		
22-18 0.4-0.8	.068 1.73	B	1658541-1	1658542-2	91513-1 (Green Dot)	466996-1***
		C	745229-5	745230-5		

Note: Wire insulation diameter is limited by the connector housing cavity and clearance for the insertion/extraction tool.

*For Part Nos. of Special Applicators and Applicators for other model machines, call the TE Tooling Assistance Center at 1-800-722-1111.

***For use with AMP-O-MATIC Model II Stripper-Crimper Machine.

Note: All part numbers are RoHS compliant.

Related Product Data:

Performance Characteristics—page 41

Connectors used with:
HDP—pages 92-97

Application Tooling—page 102

Technical Documents:

Product Specification—108-40005

Application Specifications—114-10000
 114-40030

Note: Instruction Sheets for TE Tooling are packaged with the tooling. For additional information call the Tooling Assistance Center: 1-800-722-1111.

Insertion/Extraction Tool No. 91285-1

Instruction Sheet—408-9404

HDP-20 Connector Contacts, Precision Formed (Continued)

**Contact Size 20 DF
Pin Diameter .040 [1.02]
Material and Finish:**

Pin—Brass
Socket—Phosphor bronze
Plated:
A—Duplex plated .000030 [0.00076] gold on mating end, with entire contact .000050 [0.00127] min. nickel under-plated
B—Duplex plated gold flash on mating end, with entire contact .000050 [0.00127] min. nickel underplated

Related Product Data:
Performance Characteristics—page 41
Connectors used with:
HDP—pages 92, 93

Technical Documents:
Product Specification—108-40005
Application Specifications—114-10000
114-40030

Note: Instruction Sheets for TE Tooling are packaged with the tooling. For additional information call the Tooling Assistance Center: **1-800-722-1111**.

**Contact Size 20 DF
Pin Diameter .040 [1.02]
Material and Finish:**

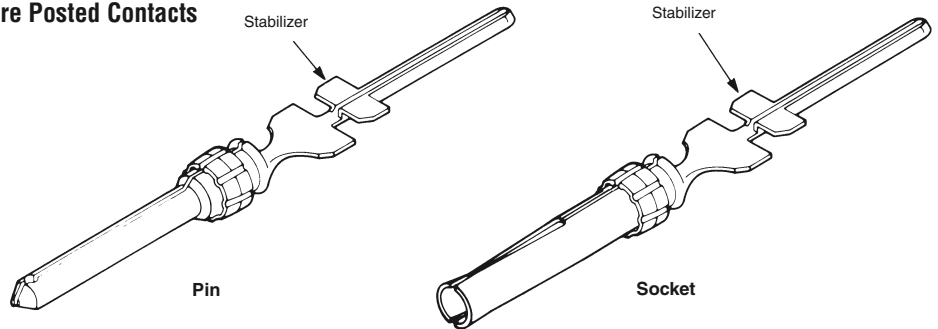
Pin—Brass
Socket—Phosphor bronze
Plated—Gold flash over nickel on entire contact, with additional .000030 [0.00076] gold on mating end

Related Product Data:
Performance Characteristics—page 41
Connectors used with:
HDP—pages 92-97
Technical Documents:
Product Specification—108-40005
Application Specification—114-40030

**Insertion/Extraction Tool
No. 91285-1**

This tool includes interchangeable tips to Insert/Extract:
Size 22, 28-22 AWG [0.08-0.4 mm²]
Size 20, Posted Contacts
(Instruction Sheet—408-9404)

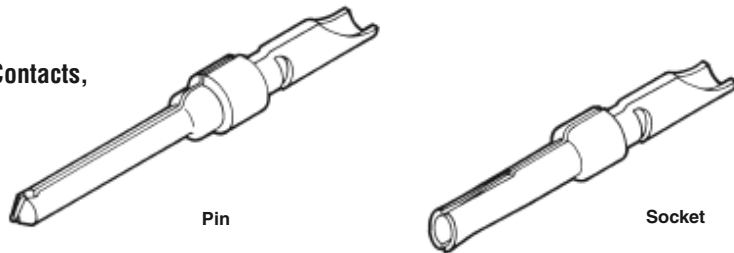
**.025 [0.64]
Square Posted Contacts**



Contact Finish (Plating Code)	Loose Form Contact Numbers							
	.125 [3.18] Post Length*		.188 [4.78] Post Length*		.427 [10.85] Post Length*		.651 [16.54] Post Length*	
	Pin	Socket	Pin	Socket	Pin	Socket	Pin	Socket
A	—	5-745288-5	5-745287-4	7-745288-0	4-745287-7	5-745288-8	5-745287-0	6-745288-1
B	—	—	—	—	—	7-745288-2	—	7-745288-2

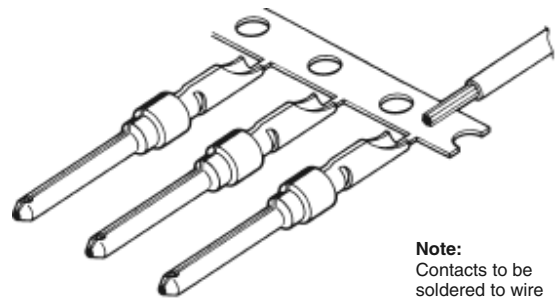
*Length of post extending from rear of HDP-20 metal-shell connector.

**Solder Cup Contacts,
Snap-In**



18 AWG Max. Wire (.046 [1.17] Max. Conductor Diameter)

Pin	Strip Form Contact Number		Pin	Loose Form Contact Number	
	Socket	Socket		Socket	Socket
66570-2	66569-2	66570-3	66569-3		



Note:
Contacts to be soldered to wire before being inserted into housing

Note: All part numbers are RoHS compliant.