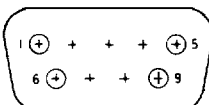
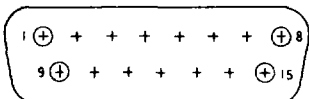


Wire to Board Connectors AMPLIMITE* Subminiature D HD-20 Connectors

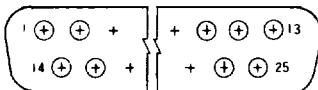
Insert arrangements



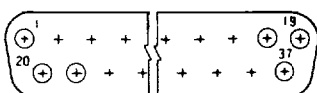
9 Pos. (Shell Size 1)



15 Pos. (Shell Size 2)

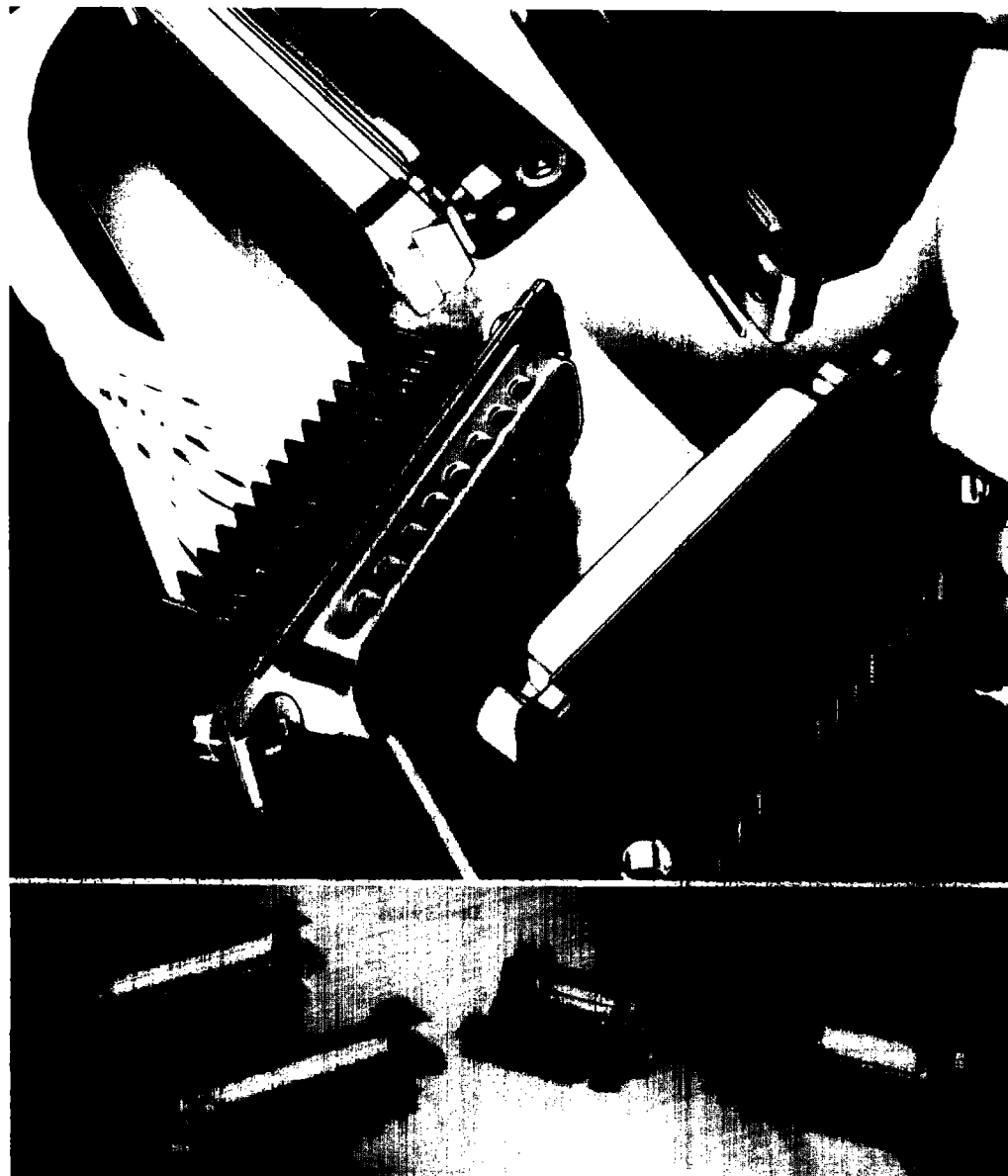


25 Pos. (Shell Size 3)



37 Pos. (Shell Size 4)

Note: The drawing indicates mating points on the plug side. They are located in mirror image on the receptacle side.



AMPLIMITE Connectors are compact pin and socket-type connectors used widely in electric and electronic equipments, such as computer peripheral equipments, modems, industrial controls, instrumentation systems, and military and ground support systems. Included in this product line are HDE-20 Connectors which are designed for mass termination of discrete wire, jacketed cables and ribbon cables (with con-

ductors separated) by using AMP's unique insulation displacement technique. Matching application tooling is available for simultaneous mass termination of these connectors. Also available in this product line are board-mount HDP-20 Connectors which are mounted horizontally on the printed circuit board to connect with other wire-to-wire and wire-to-board AMPLIMITE connectors. These HDP-20 Connectors

are available in two styles; metal-shell connectors with plastic inserts for use in EMI environments and all-plastic connectors with plastic housings. Numerous accessories are available to accommodate all applications. For details, please contact AMP Sales Department. Shell sizes 1 thru 4 offer a wide choice of contact positions making selection of accessories and other hardware very easy.

Wire to Board Connectors AMPLIMITE Subminiature D HD-20 Connectors HDE-20 Metal-Shell Type for Wire (With IDC Contacts)

Plug Assemblies (With Grounding Indents)

Material and Finish:

Shell—Steel; Tin plated

Insert—Black Thermoplastic,
94V-0 Rated

Pin Contacts—Phosphor Bronze;
duplex plated as follows:

A—0.76 μ m gold on mating end
for length of 3.8mm min.,
2.54~5.08 μ m bright tin or
bright tin-lead on termina-
tion end, with entire contact
underplated 1.27 μ m nickel

B—Gold flash on mating end
for length of 3.8mm min.,
2.54~5.08 μ m bright tin or
bright tin-lead on termina-
tion end, with entire contact
underplated 0.76 μ m nickel

Plug Housing

Material and Finish:

Shell—Steel; Tin plated

Housing—Black glass-filled
P.B.T., 94V-0 Rated

No. of Contact Positions (Shell Size)	Plug Part No.
9 (1)	173181-1
15 (2)	173182-1
25 (3)	173183-1
37 (4)	173184-1

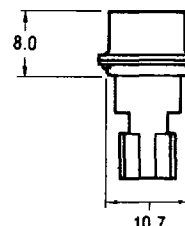
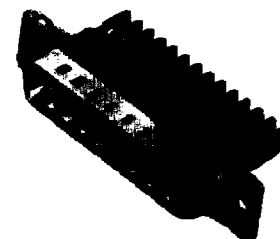
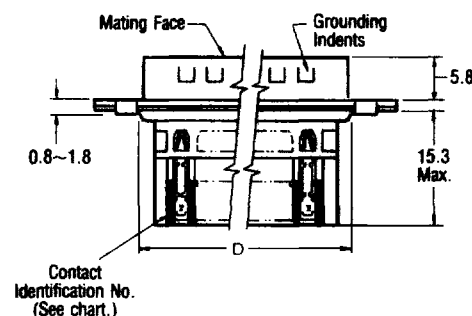
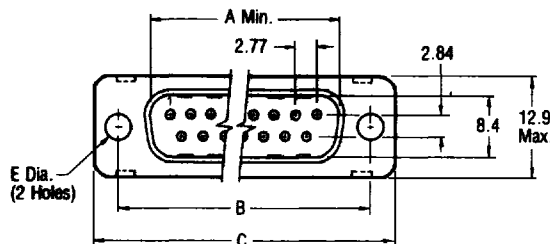
Note: These plugs use insulation displacement crimp contacts and crimp snap-in contacts. (See chart below)

Pin Contact

Material and Finish: Phosphor Bronze, gold flash on mating end for length of 3.8mm min., bright tin-lead on termination end, with entire contact underplated 0.76 μ m nickel

Wire Range AWG (mm ²)	Pin Part No.
Ins. Displacement Crimp Contact	
30-26 (0.05~0.15)	L.P. 173623-3
26-22 (0.12~0.35)	L.P. 173622-3
Crimp Snap-In Contact	
30-26 (0.05~0.15)	S.T. 173640-2
	L.P. 173640-3
26-22 (0.12~0.35)	S.T. 173625-2
	L.P. 173625-3

9, 15, 25 and 37 Positions



No. of Contact Positions (Shell Size)	Dimensions					Contact Finish (Plating Code)	Plug Assembly Part No.			
							Contact Identification No. 1	Contact Identification No. 2		Contact Identification No. 3
	A	B	C	D	E		AWG # 30-26 (0.05~0.15mm ²)	AWG # 26-22 (0.12~0.35mm ²)	AWG # 24-22 (0.20~0.35mm ²)	AWG # 22-20 (0.30~0.58mm ²)
9 (1)	16.8	24.99	30.8	19.3	3.0	A	745492-1	745492-2	—	745492-3
					3.2	B	173177-1*	—	173177-2*	745492-6
					3.8	A	745492-7	745492-8	—	745492-9
					3.8	B	1-745492-0	1-745492-1	—	1-745492-2
15 (2)	25.1	33.32	39.1	27.5	3.0	A	745494-1	745494-2	—	745494-3
					3.2	B	173178-1*	—	173178-2*	745494-6
					3.8	A	745494-7	745494-8	—	745494-9
					3.8	B	1-745494-0	1-745494-1	—	1-745494-2
25 (3)	38.8	47.04	53.0	41.3	3.0	A	745496-1	745496-2	—	745496-3
					3.2	B	173179-1*	—	173179-2*	745496-6
					3.8	A	745496-7	745496-8	—	745496-9
					3.8	B	1-745496-0	1-745496-1	—	1-745496-2
37 (4)	55.3	63.50	69.3	57.7	3.0	A	745498-1	745498-2	—	745498-3
					3.2	B	173180-1*	—	173180-2*	745498-6
					3.8	A	745498-7	745498-8	—	745498-9
					3.8	B	1-745498-0	1-745498-1	—	1-745498-2

- Notes: 1. All plug assemblies are preloaded with insulation displacement crimp pin contacts. Contacts accept a max. wire insulation thickness of 0.4mm and a max. wire insulation dia. of 1.5mm.
(* These contacts accept a max. wire insulation dia. of 1.4mm.)
2. HDE-20 connectors are designed for terminating solid or stranded (7-strand) wire.
3. Extraction Tool No. 91232-1 is used to remove pin contacts.
4. Selectively loaded connectors are available for RS-232 equipment application, consult AMP Sales Dept.
5. See page 508 for panel cutout.

Wire to Board Connectors

AMPLIMITE Subminiature D HD-20 Connectors

HDE-20 All-Plastic Type for Wire (With IDC Contacts)

Plug Assemblies

Material and Finish:

Housing—Black Thermoplastic,
94V-0 Rated

Pin Contacts—Phosphor Bronze;
duplex plated as follows:

- A—0.76 μ m gold on mating end
for length of 3.8mm min.,
2.54~5.08 μ m bright tin or
bright tin-lead on termina-
tion end, with entire contact
underplated 1.27 μ m nickel
- B—Gold flash on mating end
for length of 3.8mm min.,
2.54~5.08 μ m bright tin or
bright tin-lead on termina-
tion end, with entire contact
underplated 0.76 μ m nickel

Plug Housing

Material and Finish:

Housing—Black glass-filled P.B.T.,
94V-0 Rated

No. of Contact Positions (Shell Size)	Plug Part No.
9 (1)	173201-1
15 (2)	173202-1
25 (3)	173203-1
37 (4)	173204-1

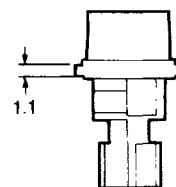
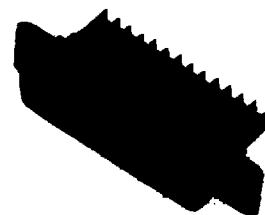
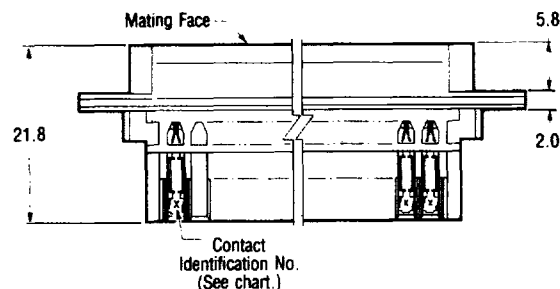
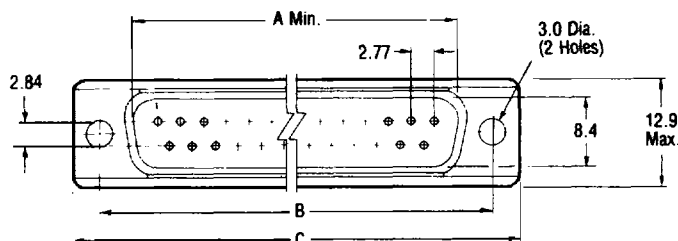
Note: These plugs use insulation displacement crimp contacts and crimp snap-in contacts. (See chart below)

Pin Contact

Material and Finish: Phosphor Bronze, gold flash on mating end for length of 3.8mm min., bright tin-lead on termination end, with entire contact underplated 0.76 μ m nickel

Wire Range AWG (mm ²)	Pin Part No.
Ins. Displacement Crimp Contact	
30-26 (0.05~0.15)	L.P. —
26-22 (0.12~0.35)	L.P. 173622-3
Crimp Snap-In Contact	
30-26 (0.05~0.15)	S.T. 173640-2
	L.P. 173640-3
26-22 (0.12~0.35)	S.T. 173625-2
	L.P. 173625-3

9, 15, 25 and 37 Positions



No. of Contact Positions (Shell Size)	Dimensions			Contact Finish (Plating Code)	Plug Assembly Part No.			
	A	B	C		Contact Identification No. 1	Contact Identification No. 2		Contact Identification No. 3
					AWG#30-26 (0.05~0.15mm ²)	AWG#26-22 (0.12~0.35mm ²)	AWG#24-22 (0.20~0.35mm ²)	AWG#22-20 (0.30~0.58mm ²)
9	16.8	24.99	30.8	A	745203-1	745203-2	—	745203-3
(1)				B	173197-1*	—	173197-2*	745203-6
15	25.1	33.32	39.1	A	745207-1	745207-2	—	745207-3
(2)				B	173198-1*	—	173198-2*	745207-6
25	38.9	47.04	53.0	A	745211-1	745211-2	—	745211-3
(3)				B	173199-1*	—	173199-2*	745211-6
37	55.3	63.50	69.3	A	745215-1	745215-2	—	745215-3
(4)				B	173200-1*	—	173200-2*	745215-6

Notes: 1. All plug assemblies are preloaded with insulation displacement crimp pin contacts. Contacts accept a max. wire insulation thickness of 0.4mm and a max. wire insulation dia. of 1.5mm.

(* These contacts accept a max. wire insulation dia. of 1.4mm.)

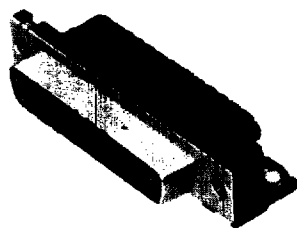
2. HDE-20 connectors are designed for terminating solid or stranded (7-strand) wire.

3. Extraction Tool No. 91232-1 is used to remove pin contacts.

4. See page 508 for panel cutout.

Wire to Board Connectors AMPLIMITE Subminiature D HD-20 Connectors HDP-20 Metal-Shell Type

8.1mm Mount Receptacle Assemblies



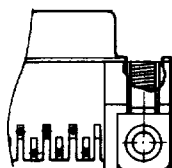
Material and Finish:

Shell—Steel; Tin plated
Insert—Black Thermoplastic,
94V-0 Rated
Eyelets—Brass; Tin plated
Threaded Inserts—Brass;
unplated
Female Screwlocks—Brass;
Nickel plated
Socket Contacts (Posted)—
Phosphor Bronze; duplex plated
as follows:

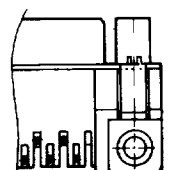
A—0.76 μ m gold on mating end
for length of 2.5mm min.,
2.54~5.08 μ m bright tin or
bright tin-lead on post, with
entire contact underplated
1.27 μ m nickel

B—Gold flash on mating end
for length of 2.5mm min.,
2.54~5.08 μ m bright tin or
bright tin-lead on post, with
entire contact underplated
1.27 μ m nickel

C—0.38 μ m min. gold on mating
end for length of 2.5mm
min., 2.54~5.08 μ m bright
tin or bright tin-lead on post,
with entire contact under-
plated 1.27 μ m nickel

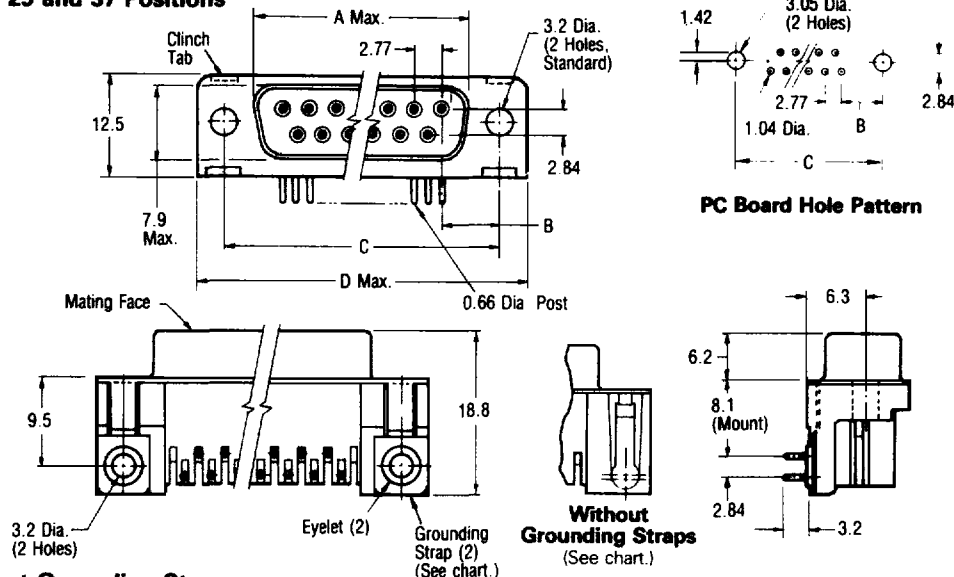


With 4-40 Threaded Inserts



With 4-40 Fixed Female
Screwlocks

9, 15, 25 and 37 Positions



Without Grounding Straps

No. of Contact Positions (Shell Size)	Dimensions				Contact Finish (Plating Code)	Receptacle Assembly Part No.		
	A	B	C	D		With Standard Mounting Holes	With Threaded Inserts	With Fixed Female Screwlocks
9	16.3	7.01	24.99	30.8	A	745781-9	1-745781-1	1-745781-3
(1)					B	745781-8	1-745781-0	1-745781-2
15	24.7	7.06	33.32	39.1	A	—*	—*	—*
(2)					B	—*	—*	—*
25	38.4	6.96	47.04	53.0	A	745783-9	1-745783-1	1-745783-3
(3)					B	745783-8	1-745783-0	1-745783-2
37	54.8	6.91	63.50	69.3	A	—*	—*	—*
(4)					B	—*	—*	—*

* 15- and 37-position receptacle assemblies can be made available, consult AMP Sales Dept.

With Grounding Straps

No. of Contact Positions (Shell Size)	Dimensions				Contact Finish (Plating Code)	Receptacle Assembly Part No.		
	A	B	C	D		With Standard Mounting Holes	With Threaded Inserts	With Fixed Female Screwlocks
9 (1)	16.3	7.01	24.99	30.8	A	745781-2	745781-4	745781-6
					B	173153-1	745781-3	—
					C	173153-2	—	174091-2
15 (2)	24.7	7.06	33.32	39.1	A	745782-2	745782-4	745782-6
					B	173154-1	745782-3	174092-1
					C	173154-2	—	174092-2
25 (3)	38.4	6.96	47.04	53.0	A	745783-2	745783-4	745783-6
					B	173155-1	745783-3	174081-1
					C	173155-2	—	174081-2
37 (4)	54.8	6.91	63.50	69.3	A	745784-2	745784-4	745784-6
					B	173156-1	745784-3	174094-1
					C	173156-2	—	174094-2

Notes 1 All receptacle assemblies are preloaded with size 20 DF posted socket contacts.

2 Recommended pc board thickness is 2.4mm max

3 See page 508 for panel cutout.

4 Male screw retainers are used as mating hardware for connectors with 4-40 threaded inserts and female screwlocks.

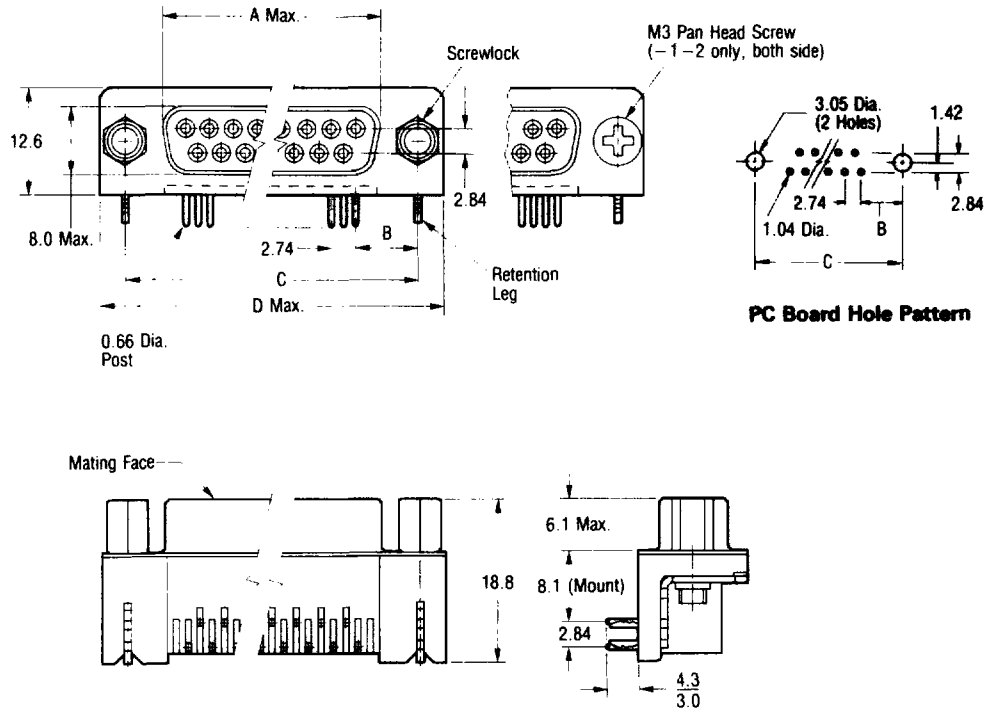
Wire to Board Connectors AMPLIMITE Subminiature D HD-20 Connectors HDP-20 Metal-Shell Type

8.1mm Mount Receptacle Assemblies (With Retention Leg)

Material and Finish:

Housing—Black Thermoplastic
Shell—Carbon Steel, Tin plated
Screwlock and Screw—
Carbon Steel, Nickel plated
Retention Leg—Copper alloy,
Tin or Tin-lead plated
Socket Contact (Right Angle
Posted)—Copper alloy;
duplex plated as follows:
B—Gold flash on mating area,
tin-lead on post, with
entire contact underplated
nickel
C—0.38 μ m min. gold on mating
area, tin-lead on post,
with entire contact under-
plated nickel

9, 15, 25 and 37 Positions



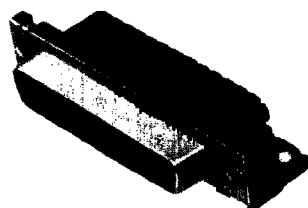
PC Board Hole Pattern

No. of Contact Positions (Shell Size)	Dimensions				Contact Finish (Plating Code)	Receptacle Assembly Part No.			
	A	B	C	D		Pan Head Screw	With Fixed Female Screwlocks		
							M2.6	4-40	M3
9	16.5	7.01	24.99	31.2	B	173940-1	173940-3	173940-5	173940-7
(1)					C	173940-2	173940-4	173940-6	173940-8
15	24.8	7.06	33.32	39.5	B	173941-1	173941-3	173941-5	173941-7
(2)					C	173941-2	173941-4	173941-6	173941-8
25	38.5	6.96	47.04	53.4	B	173942-1	173942-3	173942-5	173942-7
(3)					C	173942-2	173942-4	173942-6	173942-8
37	55.0	6.91	63.50	69.8	B	173943-1	173943-3	173943-5	173943-7
(4)					C	173943-2	173943-4	173943-6	173943-8

- Notes 1. All receptacle assemblies are preloaded with size 20 DF posted socket contacts.
2. Recommended pc board thickness is 1.2-2.4mm.
3. See page 508 for panel cutout.
4. Male screw retainers are used as mating hardware for connectors with 4-40 threaded inserts and female screwlocks.
5. 19 position receptacle assemblies can be made available

Wire to Board Connectors AMPLIMITE Subminiature D HD-20 Connectors HDP-20 All-Plastic Type for PCB

Receptacle Assemblies



Material and Finish:

Housing—Black Thermoplastic,
94V-0 Rated

Threaded Inserts—Brass;
unplated

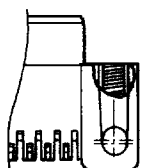
Female Screwlocks—Brass;
Nickel plated

Socket Contacts (Posted)—
Phosphor Bronze; duplex plated
as follows:

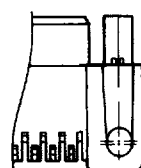
A—0.76 μ m gold on mating end
for length of 2.5mm min.,
2.54~5.08 μ m bright tin or
bright tin-lead on post, with
entire contact underplated
0.76 μ m nickel

B—Gold flash on mating end
for length of 2.5mm min.,
2.54~5.08 μ m bright tin or
bright tin-lead on post, with
entire contact underplated
1.27 μ m nickel

C—0.38 μ m min. gold on mating
end for length of 2.5mm
min., 2.54~5.08 μ m bright
tin or bright tin-lead on post,
with entire contact under-
plated 1.27 μ m nickel

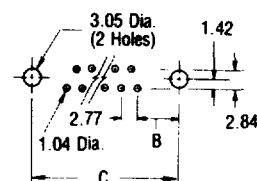
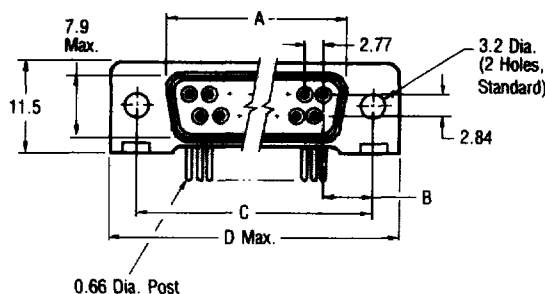


With 4-40 Threaded Inserts

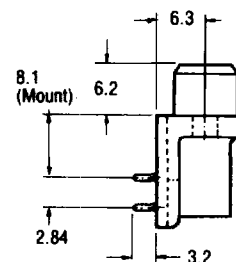
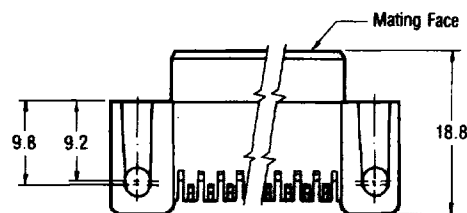


With 4-40 Fixed Female
Screwlocks

9, 15, 25 and 37 Positions



PC Board Hole Pattern



No. of Contact Positions (Shell Size)	Dimensions				Contact Finish (Plating Code)	Receptacle Assembly Part No.		
	A	B	C	D		With Standard Mounting Holes	With Threaded Inserts	With Fixed Female Screwlocks
9 (1)	16.3	7.01	24.99	30.8	A	745131-2	745394-2	745395-2
					B	173165-1	745394-1	174095-1
					C	173165-2	—	174095-2
15 (2)	24.7	7.06	33.32	39.1	A	745271-2	745393-2	745396-2
					B	173166-1	745393-1	174096-1
					C	173166-2	—	174096-2
25 (3)	38.4	6.96	47.04	53.0	A	745132-2	745392-2	745397-2
					B	173167-1	745392-1	174097-1
					C	173167-2	—	174097-2
37 (4)	54.8	6.91	63.50	69.3	A	747093-2	747724-2	747725-2
					B	173168-1	747724-1	174098-1
					C	173168-2	—	174098-2

Notes: 1. All receptacle assemblies are preloaded with size 20 DF posted socket contacts.

2. Recommended pc board thickness is 2.4mm max.

3. See page 508 for panel cutout.

4. Male screw retainers are used as mating hardware for connectors with 4-40 threaded inserts and female screwlocks

Wire to Board Connectors

AMPLIMITE Subminiature D HD-20 Connectors

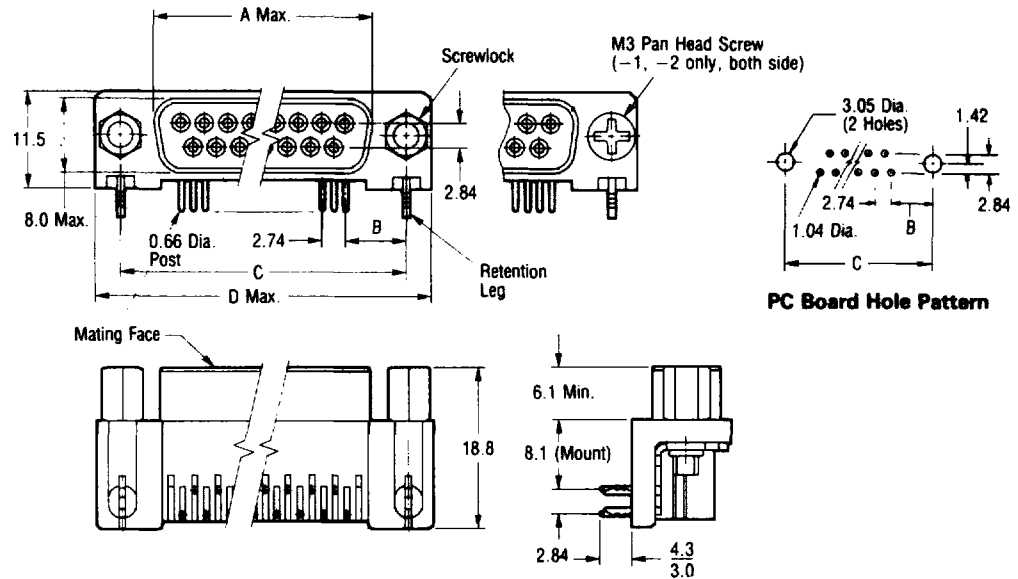
HDP-20 All-Plastic Type for PCB

Receptacle Assemblies

9, 15, 25 and 37 Positions

Material and Finish:

Housing—Black Thermoplastic
 Shell—Carbon Steel, Tin plated
 Screwlock and Screw—
 Carbon Steel, Nickel plated
 Retention Leg—Copper alloy,
 Tin or Tin-lead plated
 Socket Contact (Right Angle
 Posted)—Copper alloy;
 duplex plated as follows:
 B—Gold flash on mating area,
 tin-lead on post, with
 entire contact underplated
 nickel
 C—0.38µm min. gold on mating
 area, tin-lead on post,
 with entire contact under-
 plated nickel



PC Board Hole Pattern

No. of Contact Positions (Shell Size)	Dimensions				Contact Finish (Plating Code)	Receptacle Assembly Part No.			
	A	B	C	D		Pan Head Screw	With Fixed Female Screwlocks		
							M2.6	4-40	M3
9	16.5	7.01	24.99	31.2	B	173944-1	173944-3	173944-5	173944-7
(1)					C	173944-2	173944-4	173944-6	173944-8
15	24.8	7.06	33.32	39.5	B	173945-1	173945-3	173945-5	173945-7
(2)					C	173945-2	173945-4	173945-6	173945-8
25	38.5	6.96	47.04	53.4	B	173946-1	173946-3	173946-5	173946-7
(3)					C	173946-2	173946-4	173946-6	173946-8
37	55.0	6.91	63.50	69.8	B	173947-1	173947-3	173947-5	173947-7
(4)					C	173947-2	173947-4	173947-6	173947-8

- Notes: 1. All receptacle assemblies are preloaded with size 20 DF posted socket contacts
 2. Recommended pc board thickness is 1.2–2.4mm.
 3. See page 508 for panel cutout.
 4. Male screw retainers are used as mating hardware for connectors with 4-40 threaded inserts and female screwlocks.
 5. 19 position receptacle assemblies can be made available

Wire to Board Connectors

AMPLIMITE Subminiature D HD-20 Connectors

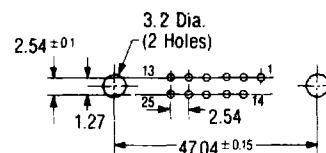
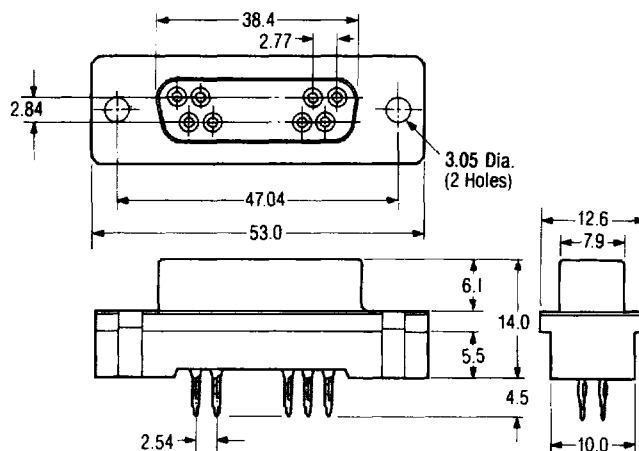
HDP-20 All-Plastic Type for PCB

ACTION PIN Receptacle Assemblies

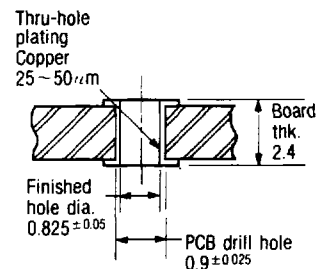
Material and Finish:
Housing—Black Thermoplastic
Shell—Steel
Contact—Copper Alloy; duplex plated.
gold on contact area. (See P/N) 0.5–2.5 μ m tin-lead on ACTION area, with entire contact 1.3 μ m min. nickel underplated.

Part No.: (Gold plate thick)
174863-1 (0.4 μ m)
174863-2 (0.76 μ m)

25 Positions



PC Board Hole Pattern

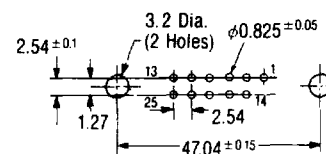
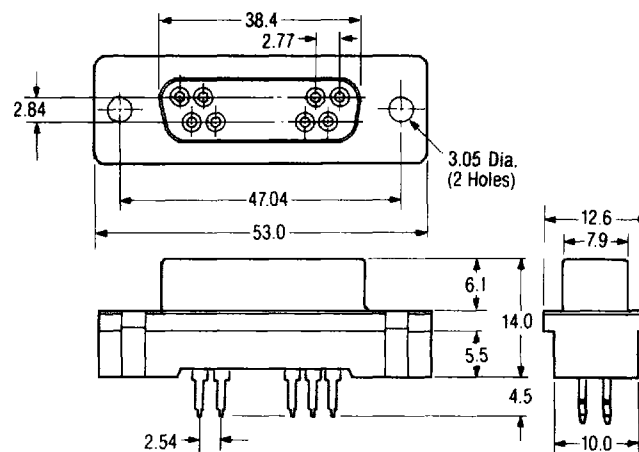


Receptacle Assemblies

Material and Finish:
Housing—Black Thermoplastic
Shell—Steel
Contact—Copper Alloy; duplex plated.
gold on contact area. (See P/N) 0.5–2.5 μ m tin-lead on ACTION area, with entire contact 1.3 μ m min. nickel underplated.

Part No.: (Gold plate thick)
175402-1 (0.4 μ m)
175402-2 (0.76 μ m)

25 Positions



PC Board Hole Pattern

Wire to Board Connectors

AMPLIMITE Subminiature D HD-20 Connectors

Contacts

Replacement Contacts Insulation Displacement Crimp

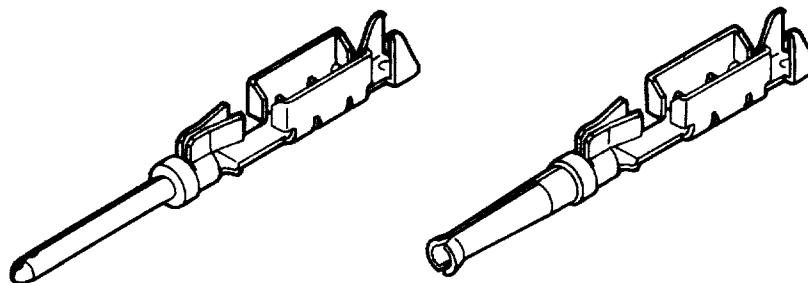
Material: Phosphor Bronze

Finish: Duplex plated as follows

A—0.76 μ m gold on mating end for length of 3.8mm min. (pin) or 2.54mm min. (socket) 2.54–5.08 μ m bright tin on termination end, with entire contact underplated 1.27 μ m nickel

B—Gold flash on mating end for length of 3.8mm min. (pin) or 2.5mm min. (socket), 2.54–5.08 μ m bright tin on termination end, with entire contact underplated 0.76 μ m nickel

† Tin or Tin-lead for † marked P/N



Pin

Socket

Wire Size Range			Ins. Dia. (Max.)	Contact Finish (Plating Code)	Loose Piece Contact Part No.	
AWG	mm ²	Code*			Pin	Socket
30-26	0.05–0.15	1	1.5	A	745930-3	745931-3
				B	—	745931-5
26-22	0.12–0.35	2	1.5	A	745888-3	745890-3
				B	173622-3††	745890-5
22-20	0.30–0.56	3	1.5	A	745887-3	745889-3
				B	745887-5	745889-5

* A code indicating accepted wire size range is stamped inside insulation crimp barrel of each contact. Contacts accept a max. wire insulation thickness of 0.4 and a max. wire insulation dia. of 1.5mm. (** These contacts accept a max. wire insulation dia. of 1.4mm.)

Note: 1. Extraction Tool No. 91232-1 is used to remove pin and socket contacts.

2. HDE-20 connector contacts are designed for terminating solid or stranded (7-strand) wire.

Interchangeable Contacts Crimp Snap-In

Material: Phosphor Bronze

Finish:

A—Duplex plated 0.86 μ m gold on mating end for length of 3.8mm min. (pin) or 2.5mm min. (socket), 2.54–5.08 μ m bright tin on termination end, with entire contact underplated 1.27 μ m nickel

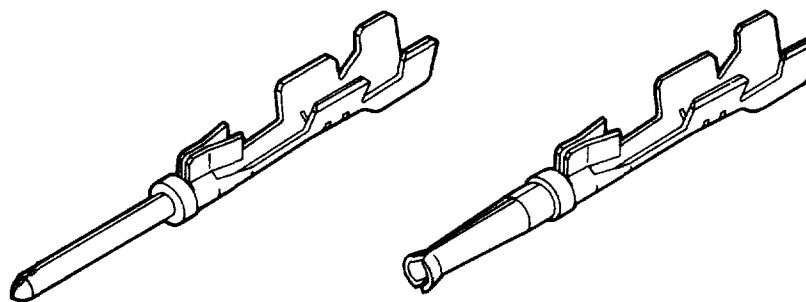
B—Duplex plated gold flash on mating end for length of 3.8mm min. (pin) or 2.5mm min. (socket), 2.54–5.08 μ m bright tin on termination end, with entire contact underplated 0.76 μ m nickel

C—Gold flash over 0.76 μ m nickel on entire contact

D—Gold flash over 0.76 μ m nickel on entire contact, selectively plated with additional 0.76 μ m gold on mating end for length of 3.8mm min. (pin) or 2.5mm min. (socket)

E—Gold flash on mating end for length of 3.8mm min., tin-lead on termination end, with entire contact underplated nickel

F—0.38 μ m gold on mating end for length of 3.8mm min., tin or tin-lead on termination end, with entire contact underplated nickel



Pin

Socket

Wire Size Range		Ins. Dia. (Max.)		Contact Finish (Plating Code)	Strip Form Pin No.	Loose Piece		Mini Appli- cator No. for Strip Form	Hand Tool No. for Loose Piece
AWG (mm ²)	Code*	Single Wire	Two Wires			Pin No.	Socket No.		
30-26 (0.05–0.15)	5	1.3	0.8	E	173640-2	173640-3	—	755780-2	755431-1
				F	173640-4	173640-5	—		
26-22 (0.12–0.35)	4	1.4	1.0	A	—	745266-3	745269-3	567179-2	90398-1
				E	173625-2	173625-3	745269-7		
				F	173625-4	173625-5	—		
				C	—	745266-5	745269-5		
22-18 (0.30–0.89)	3	1.9	1.4	D	—	745266-9	745269-9	—	90399-1
				A	—	745267-3	745270-3		
				B	—	745267-7	745270-7		
				C	—	745267-5	745270-5		
				D	—	745267-9	745270-9		

* A code indicating accepted wire size range is stamped inside insulation crimp barrel of each contact. Note: Extraction Tool No. 91232-1 is used to remove pin and socket contacts

Wire to Board Connectors

AMPLIMITE Subminiature D HD-20 Connectors

Accessories

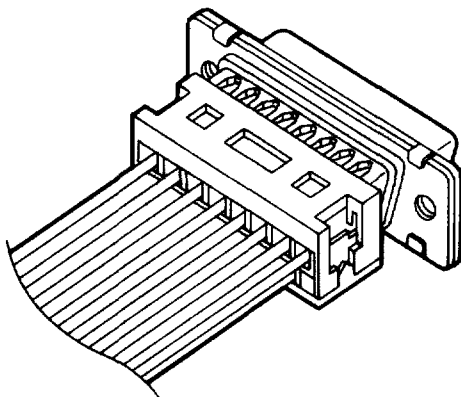
Inner Cover For shell size 2 (15 pos.)

Material: 94V-2 rated, Black Nylon

Part No.: —

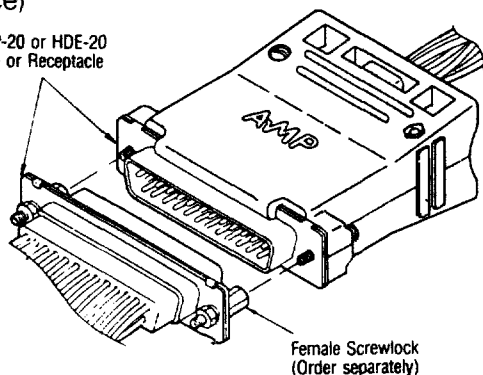
Applicable Connectors:

HDE-20 Metal-Shell (P/N 745494, 173178, 173179, 173180)
HDE-20 All-Plastic (P/N 173198, 745207)



Straight/90° Exit Cable Clamp Assembly (Two Piece)

HDP-20 or HDE-20 Plug or Receptacle



Female Screwlock (Order separately)

Material and Finish:

Cable Clamp Housing—Grey Thermoplastic
4-40 Mounting Screw—Zinc plated steel
4-40 Housing Screw and Hex Nut—steel

Applicable Connectors:

HDE-20 Metal-Shell (P/N 745494, 745496, 745498, 173178, 173179, 173180)
HDE-20 All-plastic (P/N 745207, 745211, 745215, 173198, 173199, 173200)

Straight Exit Cable Clamp Assembly (Two Piece)

For shell size 2 (15 pos.)

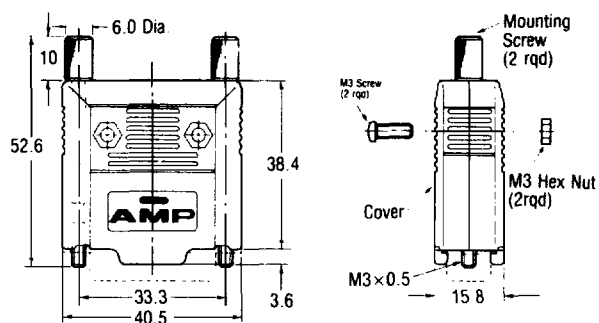
Part No.: 174181-1

Applicable Connectors:

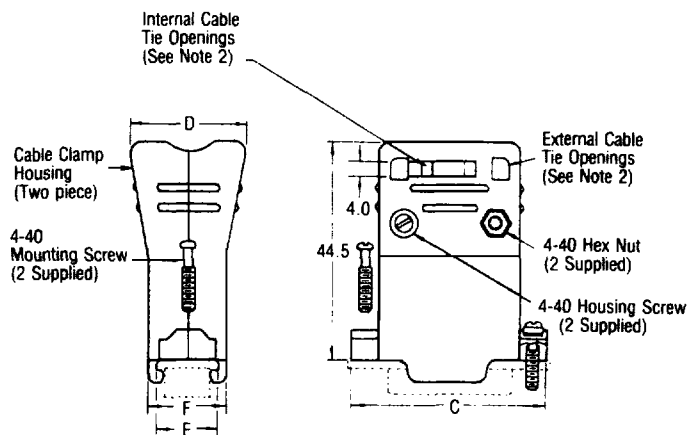
HDE-20 Metal-Shell (Only tin plated)

Material and Finish:

Cable Clamp Assembly, M3
Mounting Screw—Nickel plated Carbon Steel
M3 Screw, M3 Hex Nut—Nickel plated Brass
Cover—Mat Nickel plated Thermoplastic



Note: 1. All parts are packaged unassembled.
2. Screws must be purchased separately.
3. Split-ring and crimp ferrule are also available.



No. of Pos. (Shell Size)	Dimensions						Ins. Dia. (Max.)	Part No. of Cable Clamp Part No.
	A	B	C	D	E	F		
15 (2)	28.3	33.32	39.4	21.0	12.7	15.7	8.9	206471-1
25 (3)	42.0	47.04	53.1	21.0	12.7	15.7	8.5	172462-2
37 (4)	58.5	63.50	69.5	21.0	12.7	15.7	17.1	172462-3
50 (5)	56.1	61.11	67.2	23.8	15.5	18.6	19.7	172462-4

Note: 1. All parts are packaged unassembled.
2. At either 180° or 90° cable exit, AMP All-Plastic Cable Tie can be slipped into the cable-bundle opening to fasten and accommodate cables halfway through the housing.
3. It should be noted that the upper part number of each assembly uses inch-sized screws and the lower part number metric-sized screws. Part number of the mating female screws is 172461-1. Inch-sized female screws are also available.

Wire-to-Board Connectors

AMPLIMITE Subminiature D HD-20 Connectors

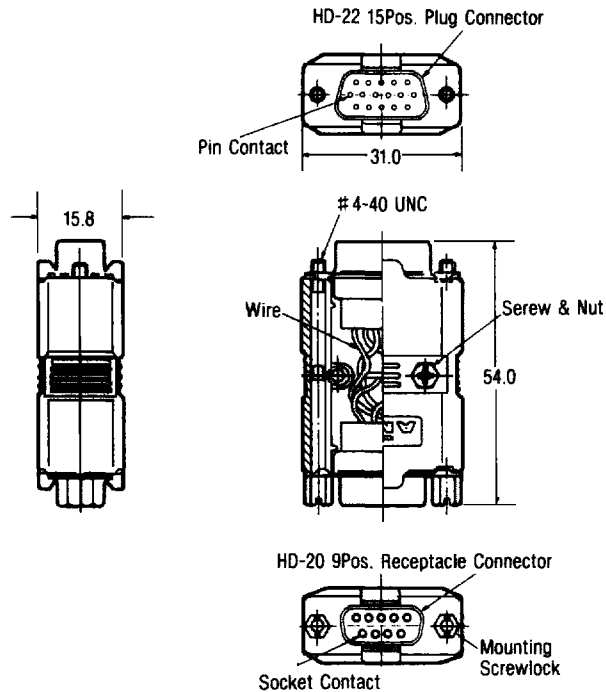
Adaptor Assemblies

Size 1 HD-22 Plug & HD-20 Receptacle

Material and Finish:

Shell—Tin plated steel
 Insert—Thermoplastic
 Pin & Socket Contact—
 Copper alloy, 0.76µm gold
 on contact area
 Mounting Screwlock—Nickel
 plated carbon steel
 Adaptor Cover—ABS, Nickel
 plated
 Screw & Nut—Nickel plated
 brass

Part No.: 175765-1

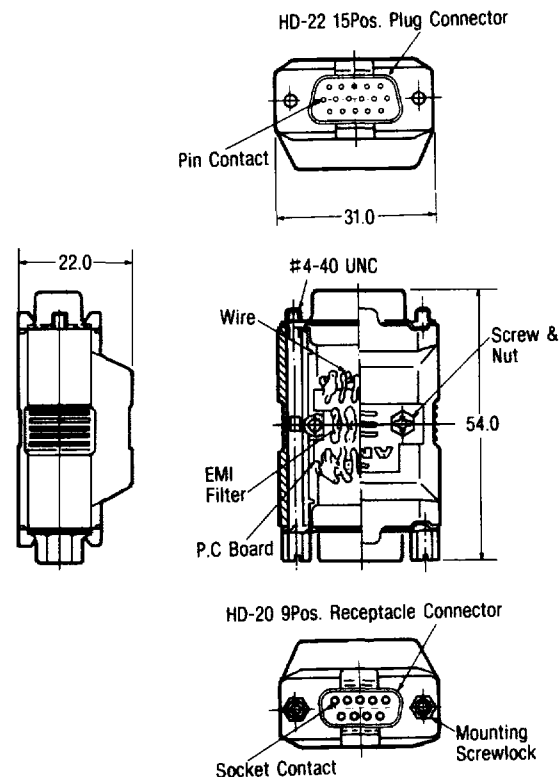


Size 1 HD-22 Plug & HD-20 Receptacle With Filter

Material and Finish:

Shell—Tin plated steel
 Insert—Thermoplastic
 Pin & Socket Contact—
 Copper alloy, 0.76µm gold
 on contact area
 Mounting Screwlok—Nickel
 plated carbon steel
 Adaptor Cover—ABS, Nickel
 plated
 Screw & Nut—Nickel plated
 brass

Part No.: 175766-1



Wire-to-Board Connectors **AMPLIMITE Subminiature D HD-20 Connectors** **Accessories**

Straight Exit

Cable Clamp
 Assemblies(Two Piece)
 For Shell Size 1(9 pos.)

Material and Finish :

Cable Cover —94V-0 rated,
 ABS, nickel plated
 Steel Clamp & Mounting
 Screw —Nickel plated
 carbon steel
 Screw & Hex Nut—Brass,
 nickel plated

Part Number :

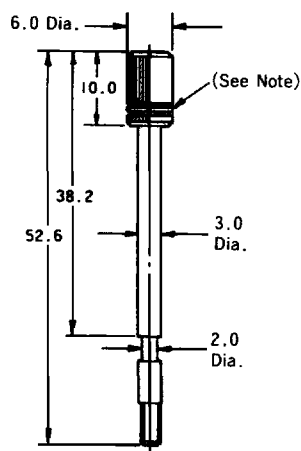
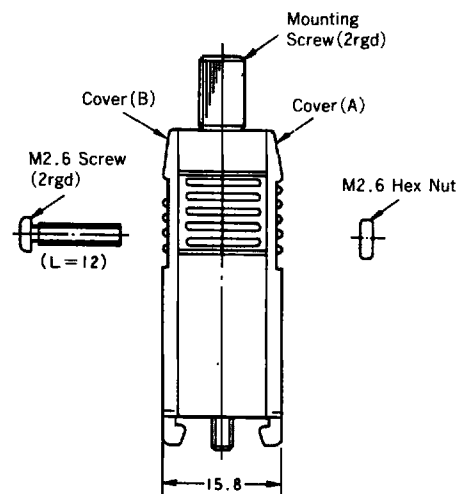
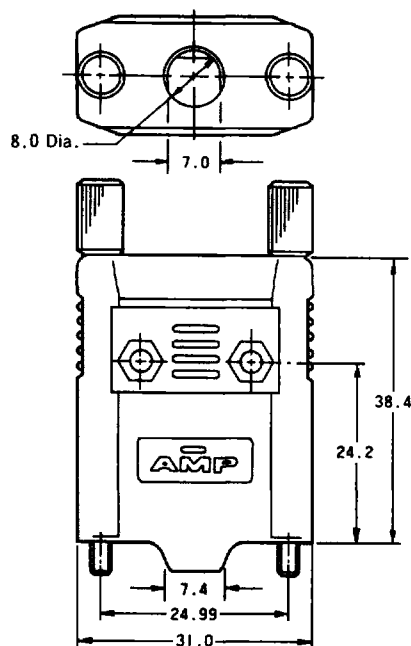
174469-1(M3 Screw)
174469-2(M2.6 Screw)
174469-3(#4-40 Screw)

Applicable Connectors :

HD-20 Metal Shell (Tin plated
 only)

Note

- 1 : All parts packaged
 unassembled.
- 2 : M3 mounting screw
 (without thread)
 M2.6 mounting screw (with
 one thread)
 #4-40 mounting screw (with
 two thread)



Wire-to-Board Connectors

AMPLIMITE Subminiature D HD-20 Connectors

Accessories

Straight Exit

Cable Clamp
Assemblies(Two Piece)
For Shell Size 1(9 pos.)

Material and Finish :

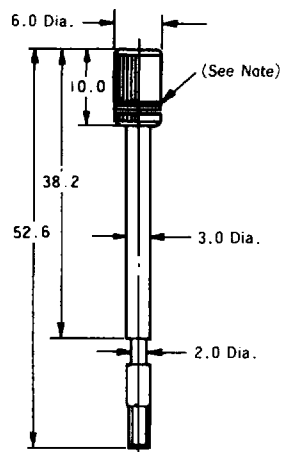
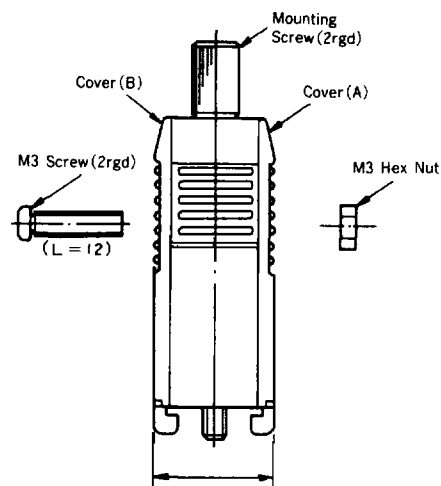
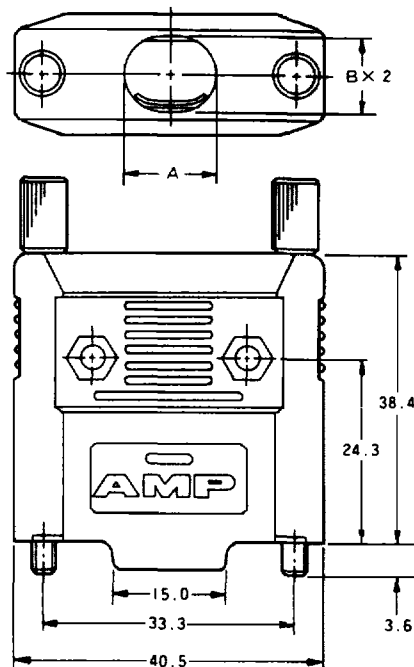
Cable Cover — 94V-0 rated,
ABS, nickel plated
Steel Clamp & Mounting
Screw — Nickel plated
carbon steel
Screw & Hex Nut — Brass,
nickel plated

Applicable Connectors :

HD-20 Metal Shell (Tin plated
only)

Note

- 1 : All parts packaged
unassembled.
- 2 : M3 mounting screw
(without thread)
M2.6 mounting screw (with
one thread)
#4-40 mounting screw (with
two thread)



Cable Dia. Range	ID Mark	Mounting Screw	Dimensions		Part Number of Cabel Clamp
			A	B	
7.0~8.0	D	M3	9.0	4.5	1-174418-1
		M2.6	9.0	4.5	1-174418-2
		#4-40	9.0	4.5	1-174418-3
10.5~11.5	H	M3	12.0	5.0	174418-1
		M2.6	12.0	5.0	174418-2
		#4-40	12.0	5.0	174418-3

Wire-to-Board Connectors

AMPLIMITE Subminiature D HD-20 Connectors

Accessories

Straight Exit Cable Clamp Assemblies (Two Piece) For Shell Size 3(25 pos.)

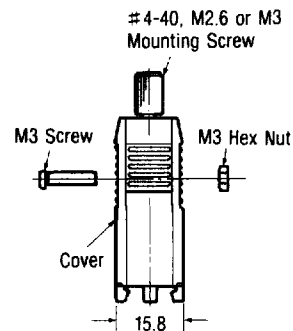
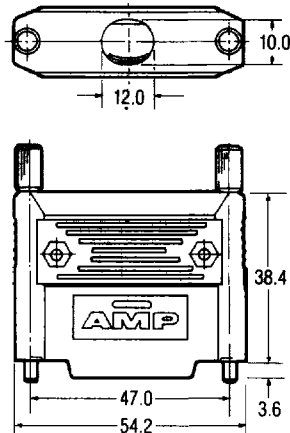
Material and Finish:

Mounting Screw—Nickel
plated carbon steel
Hex Nut & Screw—Nickel
plated brass
Cable Cover—94V-0 rated
ABS, nickel plated

Part No.: 176221-2 (M2.6 Screw)
176221-3 (#4-40 Screw)
176221-1 (M3)

Applicable Connectors:

Part No.: 205208-1 (Plug)
207464-1 (Plug)
207464-2 (Plug)
205207-1 (Rec.)
207463-1 (Rec.)



Adaptor Cover Kit (A) Size 1

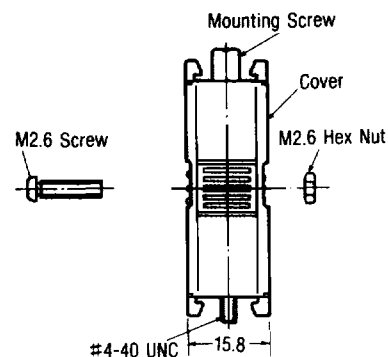
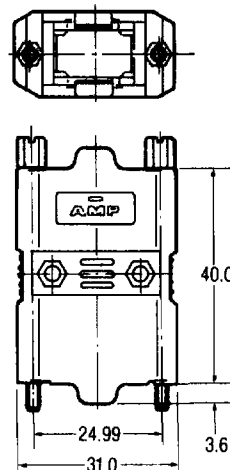
Material and Finish:

Mounting Screw—Nickel
plated carbon steel
Hex Nut & Screw—Nickel
plated brass
Adaptor Cover—94V-0 rated
ABS, nickel plated

Part No.: 175589-1

Applicable Connectors:

Part No.: 205204-□ (Plug, 9 Pos.)
747904-□ (Plug, 9 Pos.)
748364-□ (Plug, 15 Pos.)
205203-□ (Rec, 9 Pos.)
747905-□ (Rec, 9 Pos.)



NC Cable Clamp Kit Size 1

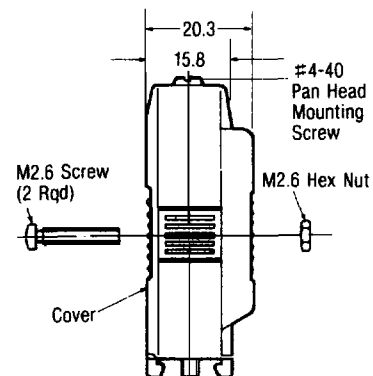
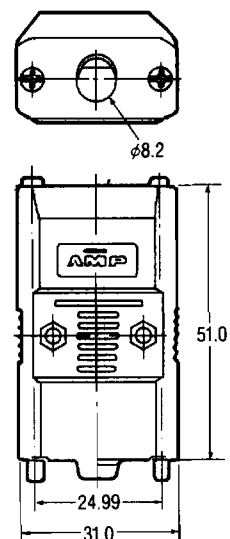
Material and Finish:

Mounting Screw—Nickel
plated carbon steel
Hex Nut & Screw—Nickel
plated brass
Steel Clamp—Carbon steel
Cable Cover—94V-0 rated
ABS, nickel plated

Part No.: 175732-1

Applicable Connectors:

Part No.: 205204-□ (Plug, 9 Pos.)
205203-□ (Rec, 9 Pos.)
748364-□ (Plug, 15 Pos.)
748537-□ (Rec, 15 Pos.)
748565-□ (Rec, 15 Pos.)



Wire-to-Board Connectors

AMPLITE Subminiature D HD-20 Connectors

Accessories

Adaptor Cover Kit Size 1

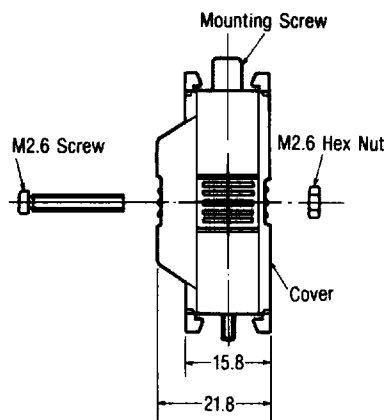
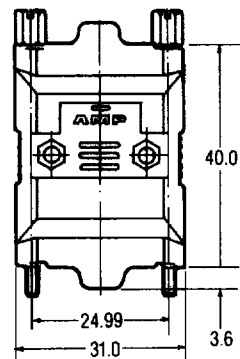
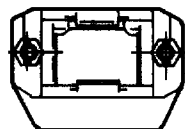
Material and Finish:

Mounting Screw—Nickel
plated carbon steel
Hex Nut & Screw—Nickel
plated brass
Adaptor Cover—94V-0 rated
ABS, nickel plated

Part No.:174772-1

Applicable Connectors:

Part No.:205204-□ (Plug, 9 Pos.)
747904-□ (Plug, 9 Pos.)
748364-□ (Plug, 15 Pos.)
205203-□ (Rec., 9 Pos.)
747905-□ (Rec., 9 Pos.)



Adaptor Cover Kit Size 2 & 1

Material and Finish:

Screwlock—Nickel plated
carbon steel
Hex Nut & Screw—Nickel
plated brass
Steel Clamp—Carbon steel
Cable Cover—94V-0 rated
ABS, nickel plated

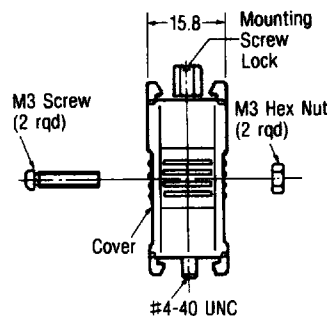
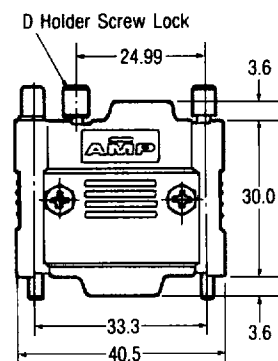
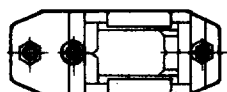
Part No.:175990-1

Applicable Connectors:

Size 1 Connector
Part No.:205204-□ (Plug, 9 Pos.)
205203-□ (Rec., 9 Pos.)
748364-□ (Plug, 15 Pos.)
748537-□ (Rec., 15 Pos.)
748565-□ (Rec., 15 Pos.)

Size 2 Connector

Part No.:205206-□ (Plug, 15 Pos.)
205205-□ (Rec., 15 Pos.)



Wire to Board Connectors AMPLIMITE Subminiature D HD-20 Connectors Accessories

Straight Exit RFI/EMI Shield for Jacketed Cable (Two Piece)

Specially designed for straight exiting of the jacketed cable, this metal shield is ideally suited for RFI/EMI shielding applications. It can be applied to both plug and receptacle connectors. Assembling with the cable is simple by virtue of its two-piece construction. The cable has to be fully prepared and terminated to the connector before the metal shield is installed. During installation, the cable's shield is folded back and compressed into the cable opening of the metal shield.

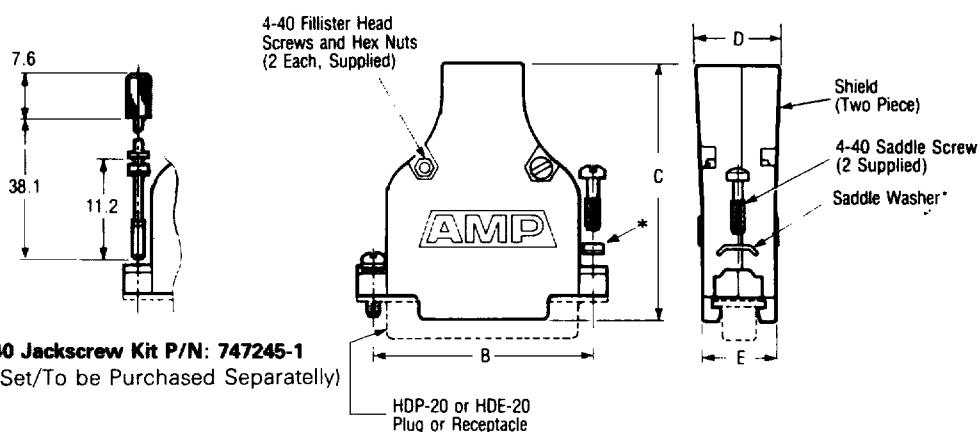
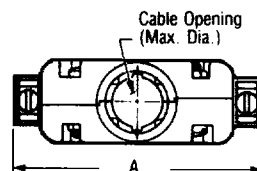
For greater cable support and/or improved shielding effectiveness, the use of split-ring and crimp ferrules is recommended. The RFI/EMI metal shield is available in many sizes to accommodate a wide range of cables within each shell size.

Material and Finish:

Metal Shield—Zinc Alloy,
plated Bright Nickel over
Bright Copper
Fillister Head Screws—
Stainless Steel
Saddle Washers, Screws &
Hex Nuts
—Zinc plated Steel

Applicable Connectors:

HDE-20 Metal-Shell (Tin plated
only)



4-40 Jackscrew Kit P/N: 747245-1
(1 Set/To be Purchased Separately)

No. of Pos. (Shell Size)	Dimensions					Cable Dia. (Max.)	Metal Shield Assembly Part No.
	A	B	C	D	E		
9 (1)	30.9	24.99	48.5	14.0	15.7	5.1	173895-4*
						6.4	173895-3*
						7.6	173895-1*
						9.4	173895-2*
15 (2)	39.2	33.32	48.5	15.7	15.7	5.7	745172-3
						7.6	745172-2
						9.5	745172-1
						10.9	1-745172-3
25 (3)	53.1	47.04	48.8	17.3	15.7	7.1	174193-5*
						8.9	174193-4*
						10.9	174193-3*
						12.2	174193-2*
						13.5	174193-1*
37 (4)	69.5	63.50	48.8	20.3	15.7	8.9	745174-5
						10.8	745174-4
						12.7	745174-3
						14.6	745174-2
						16.5	745174-1
50 (5)	67.2	61.11	48.8	22.9	18.5	9.5	745175-6
						11.4	745175-5
						13.3	745175-4
						15.2	745175-3
						17.1	745175-2
						19.1	745175-1

* With saddle-washer

Note: 1. All parts are packaged unassembled. All components except jackscrew kit are included in any of the assembly part No.
2. Jackscrew kit must be purchased separately.
3. Split-ring and crimp ferrules are also available

Wire to Board Connectors

AMPLIMITE Subminiature D HD-20 Connectors

Accessories

Straight Exit RFI/EMI Shield For Jacketed Cable (Two Piece)

This cable clamp assembly is molded from thermoplastic in the same design as the zinc-copper alloy cable clamp assembly described in the preceding page. Made of ABS resin material, the clamp is available either metal-plated over plastic for use in RFI/EMI shielding applications or unplated. This hardware too can be applied to both plug and receptacle connectors and installed to the connector terminated with the cable easily by virtue of its two-piece construction. It is available in many sizes to accept a wide range of cable diameters.

All but the 50 position assembly are with saddle washer at the screw mounting portion.

Material and Finish:

Cable Clamp—ABS resin, with or without Nickel over Copper underplated

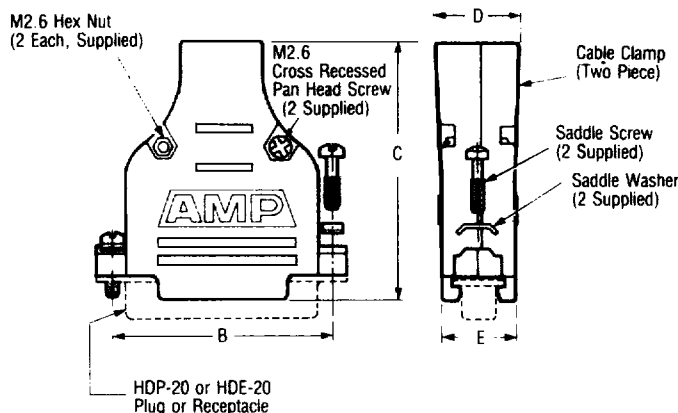
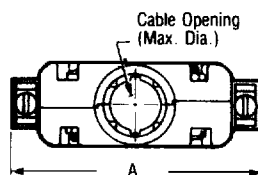
Mounting Screw—Nickel plated Brass

Saddle Washer—Nickel plated steel

M2.6 Hex Nut, M2.6 Cross Recessed Pan Head Screw—Nickel plated Brass

Applicable Connectors:

HDE-20 Metal-Shell (Tin plated only)

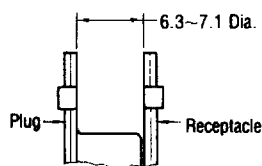


No. of Pos. (Shell Size)	Dimensions					Cable Dia. (Max.)	Plastic Cable Clamp Assembly Part No.			
	A	B	C	D	E		With Metal Plating		Without Metal Plating	
							M2.6	4-40	M2.6	4-40
9 (1)	30.9	24.99	48.5	14.0	15.8	5.1	172925-3	172921-3	1-172925-3	1-172921-3
						6.4	172925-2	172921-2	1-172925-2	1-172921-2
						9.4	172925-1	172921-1	1-172925-1	1-172921-1
15 (2)	39.2	33.32	48.5	15.7	15.7	5.85	172926-4	172922-4	1-172926-4	1-172922-4
						7.6	172926-3	172922-3	1-172926-3	1-172922-3
						9.4	172926-2	172922-2	1-172926-2	1-172922-2
						10.9	172926-1	172922-1	1-172926-1	1-172922-1
						7.1	172927-5	172923-5	1-172927-5	1-172923-5
25 (3)	53.1	47.04	48.7	17.3	15.8	8.9	172927-4	172923-4	1-172927-4	1-172923-4
						10.9	172927-3	172923-3	1-172927-3	1-172923-3
						12.2	172927-2	172923-2	1-172927-2	1-172923-2
						13.5	172927-1	172923-1	1-172927-1	1-172923-1
						8.9	172928-5	172924-5	1-172928-5	1-172924-5
37 (4)	69.5	63.50	48.8	20.3	15.8	10.8	172928-4	172924-4	1-172928-4	1-172924-4
						12.7	172928-3	172924-3	1-172928-3	1-172924-3
						14.6	172928-2	172924-2	1-172928-2	1-172924-2
						16.5	172928-1	172924-1	1-172928-1	1-172924-1

Note: 1. All parts are packaged unassembled. All components (Screw, etc) are included in any of the assembly Part No.
2. Jackscrew kit must be purchased separately. (See Page 506)
3. Split-ring and crimp ferrule are also available.

Wire to Board Connectors AMPLIMITE Subminiature D HD-20 Connectors Mating and Panel Mounting Specification

Plug/Receptacle Mating



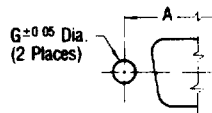
The 6.3~7.1mm dimension is required to assure full mating of connector halves. This dimension must be taken into consideration when determining the method of mounting, panel thickness, etc.

Panel Mounting

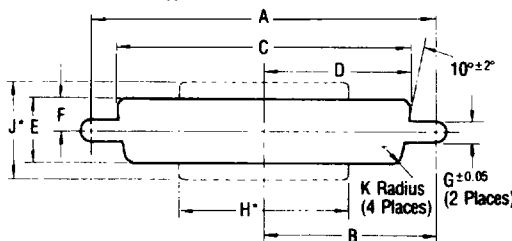
Plugs and receptacles can be mounted to a panel from either the front or rear, using a variety of accessory hardware.

Panel Cutouts

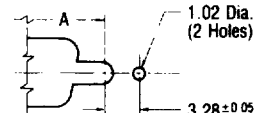
Rear-Panel Mounting (Optional Cutout)



Front-Panel Mounting (Typical Cutout)



Cutout for Rear Mount and Short Latching Blocks



Shell Size (No. of Contact Pos.)	Mounting Method		Dimensions									
	Front/Rear Panel	With/Without Floating Bushing	A	B	C	D	E	F	G	H*	J*	K
9 (1)	Front	With	24.99	12.50	23.01	11.51	13.84	6.93	2.24	9.70	16.81	2.11
		Without			22.20	11.10	13.03	6.53	3.05	8.89	16.00	
	Rear	With			21.29	10.64	12.22	6.12	2.24	8.43	16.81	3.35
		Without			20.47	10.24	11.40	5.72	3.05†	7.62	16.00	
15 (2)	Front	With	33.32	16.66	31.34	15.67	13.84	6.93	2.24	18.67	16.81	2.11
		Without			30.53	15.27	13.03	6.53	3.05	17.09	16.00	
	Rear	With			29.62	14.81	12.22	6.12	2.24	16.64	16.81	3.35
		Without			28.80	14.40	11.40	5.72	3.05†	15.82	16.00	
25 (3)	Front	With	47.04	23.52	45.09	22.56	13.84	6.93	2.24	31.67	16.81	2.11
		Without			44.27	22.15	13.03	6.53	3.05	30.86	16.00	
	Rear	With			43.33	21.67	12.22	6.12	2.24	30.40	16.81	3.35
		Without			42.52	21.26	11.40	5.72	3.05†	29.59	16.00	
37 (4)	Front	With	63.50	31.75	61.54	30.78	13.84	6.93	2.24	48.13	16.81	2.11
		Without			60.73	30.38	13.03	6.53	3.05	47.32	16.00	
	Rear	With			59.79	29.90	12.22	6.12	2.24	46.86	16.81	3.35
		Without			59.08	29.54	11.40	5.72	3.05†	46.05	16.00	
50 (5)	Front	With	61.11	30.56	59.16	29.59	16.64	8.33	2.24	45.72	19.61	2.11
		Without			58.34	29.18	15.82	7.92	3.05	44.91	18.80	
	Rear	With			57.15	28.58	14.91	7.47	2.24	44.20	19.61	3.35
		Without			56.34	28.17	14.10	7.06	3.05†	43.39	18.80	

* Panel cutout configuration with H and J dimensions provides clearance for mounting connectors with cable clamp assemblies
† G dimension is 4.83±0.05 when posted connectors with fixed female screwlocks are rear-panel mounted.

Application Tooling For HDE-20 Connector Contacts (Insulation Displacement Crimp)

Flat Ribbon Cable Terminator



Manual

Manual Tool No.:
756438-2 (AWG#30-26,
Ins. Dia. 1.19mm max.)
756438-3 (AWG#24-22,
Ins. Dia. 1.20mm min.)

Pneumatic Tool No.:
757000-2 (AWG#30-26,
Ins. Dia. 1.19mm max.)
757000-3 (AWG#24-22,
Ins. Dia. 1.20mm min.)

Pistol Grip Tool



Manual

Self-Indexing Manual Tool No.:
91230-1 (AWG#30-20,
0.05~0.6mm² Wire)
Self-Indexing Pneumatic Tool No.:
91231-1 (AWG#30-20,
0.05~0.6mm² Wire)

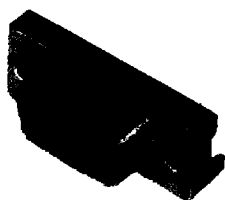
Wire to Board Connectors

AMPLIMITE Subminiature D HD-20 Connectors/III-J

PC Board Application Plug Connectors (Male Type)/Horizontal Type

U-Slim Type

Standard "D" Type For 9 position



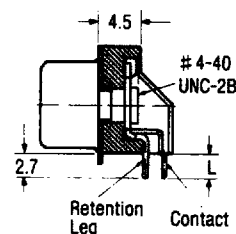
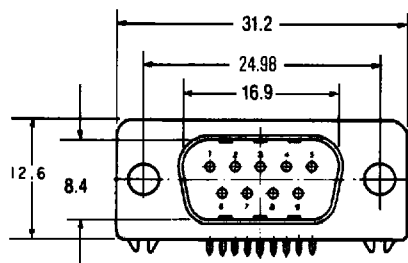
Material and Finish:

Housing—Thermoplastic
Shell—Carbon steel, tin plated
Contact—Copper alloy, gold flash or gold plated (see chart) over nickel plated, tin-lead on post area
Retention Leg—Copper alloy, tin-lead.
HD-20U-Slim Type

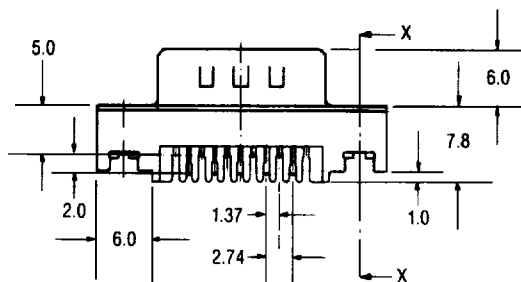
Product specifications:
108-5400

Features:

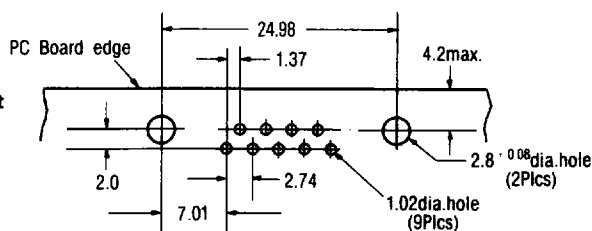
- Extremely thin ; very effective in space saving.
- Low profile.
- For mating face, two styles available, Standard Shape and Reverse Shape, enabling connectors to be used in all places.
- Connectors with ferrite core available for EMI protection.
- Use high temperature material to be compatible with IR reflow soldering.



Section X-X



PC Board Layout



No. of Position	Dimension L	Applicable Board thickness	Contact Finish	Part Numbers
9	2.15	1.2	Gold flash	177597-3
			0.76 μ m Gold	177597-9
	2.80	1.2~1.6	Gold flash	179952-3
			0.76 μ m Gold	179952-9
				179695-9*

** With ferrite.

* Nickel plated finish shell.

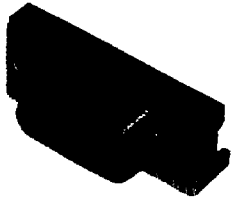
Wire to Board Connectors

AMPLIMITE Subminiature D HD-20 Connectors/III-J

PC Board Application Plug Connectors (Male Type)/Horizontal Type

U-Slim Type

Reverse "D" Shaped Type For 9 position



Material and Finish:

Housing—Thermoplastic

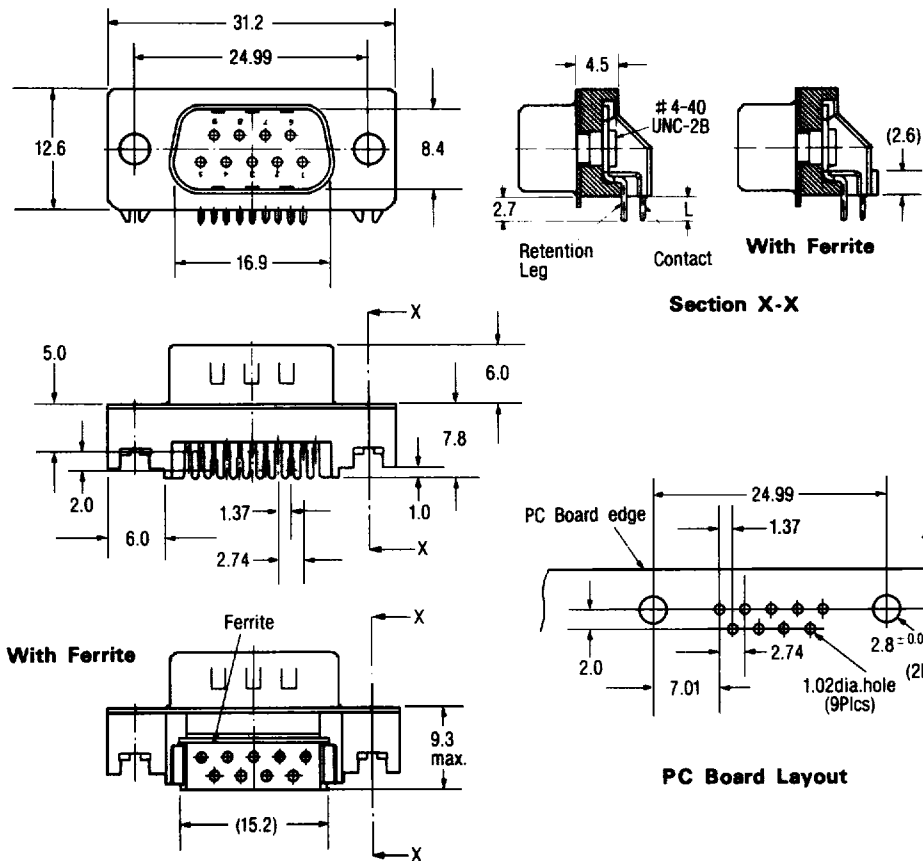
Shell—Carbon steel, tin plated

Contact—

Copper alloy, gold flash or gold plated (see chart) over nickel plated, tin-lead on post area

Retention Leg—

Copper alloy, tin-lead



No. of Position	Dimension L	Applicable Board thickness	Contact Finish	Part Numbers
9	2.15	1.2	0.76 μ m Gold	177513-9
			Gold flash	177616-9*
	2.80	1.2—1.6	0.76 μ m Gold	177816-3
				177816-9*

* With ferrite.

Wire to Board Connectors

AMPLIMITE Subminiature D HD-20 Connectors/III-J

PC Board Application Plug Connectors (Female Type)/Horizontal Type

U-Slim Type

Standard "D" Shaped Type For 25 position



Material and Finish:

Housing—Thermoplastic

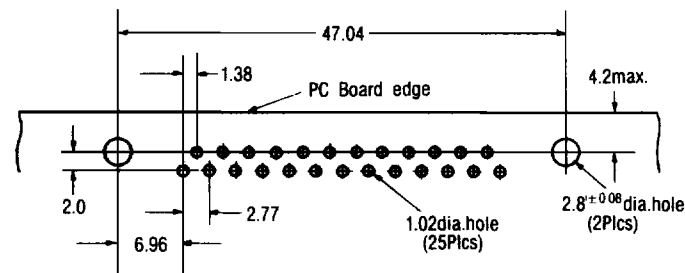
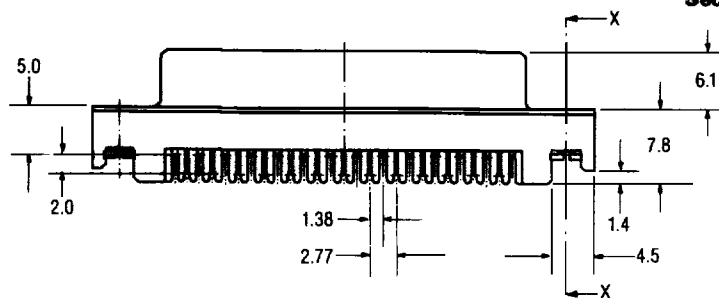
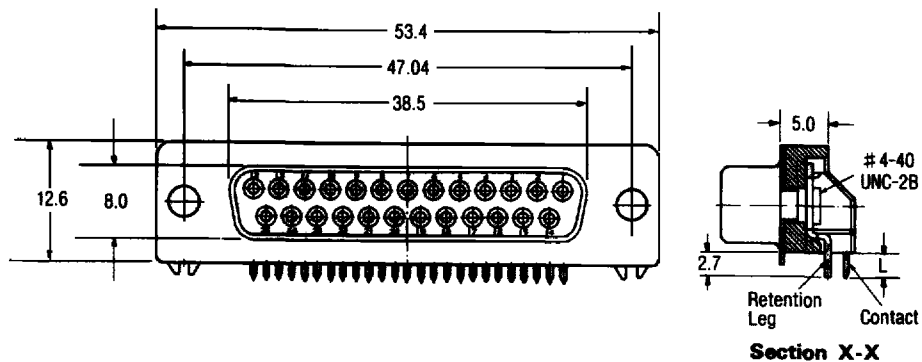
Shell—Carbon steel, tin plated

Contact—

Copper alloy, gold flash or gold plated (see chart) over nickel plated, tin-lead on post area

Retention Leg—

Copper alloy, tin-lead



No. of Position	Dimension L	Applicable Board thickness	Contact Finish	Part Numbers
25	2.15	1.2	Gold flash	177596-3
			0.76 μ m Gold	177596-9
				179070-9**
	2.80	1.2~1.6	Gold flash	179953-3
			0.76 μ m Gold	179953-9
				179185-9*

** With ferrite.

* Nickel plated finish shell for ESD.

Wire to Board Connectors

AMPLIMITE Subminiature D HD-20 Connectors/III-J

PC Board Application Receptacle Connectors (Female Type)/Horizontal Type

U-Slim Type

Reverse "D" Shaped Type For 25 position



Material and Finish:

Housing—Thermoplastic

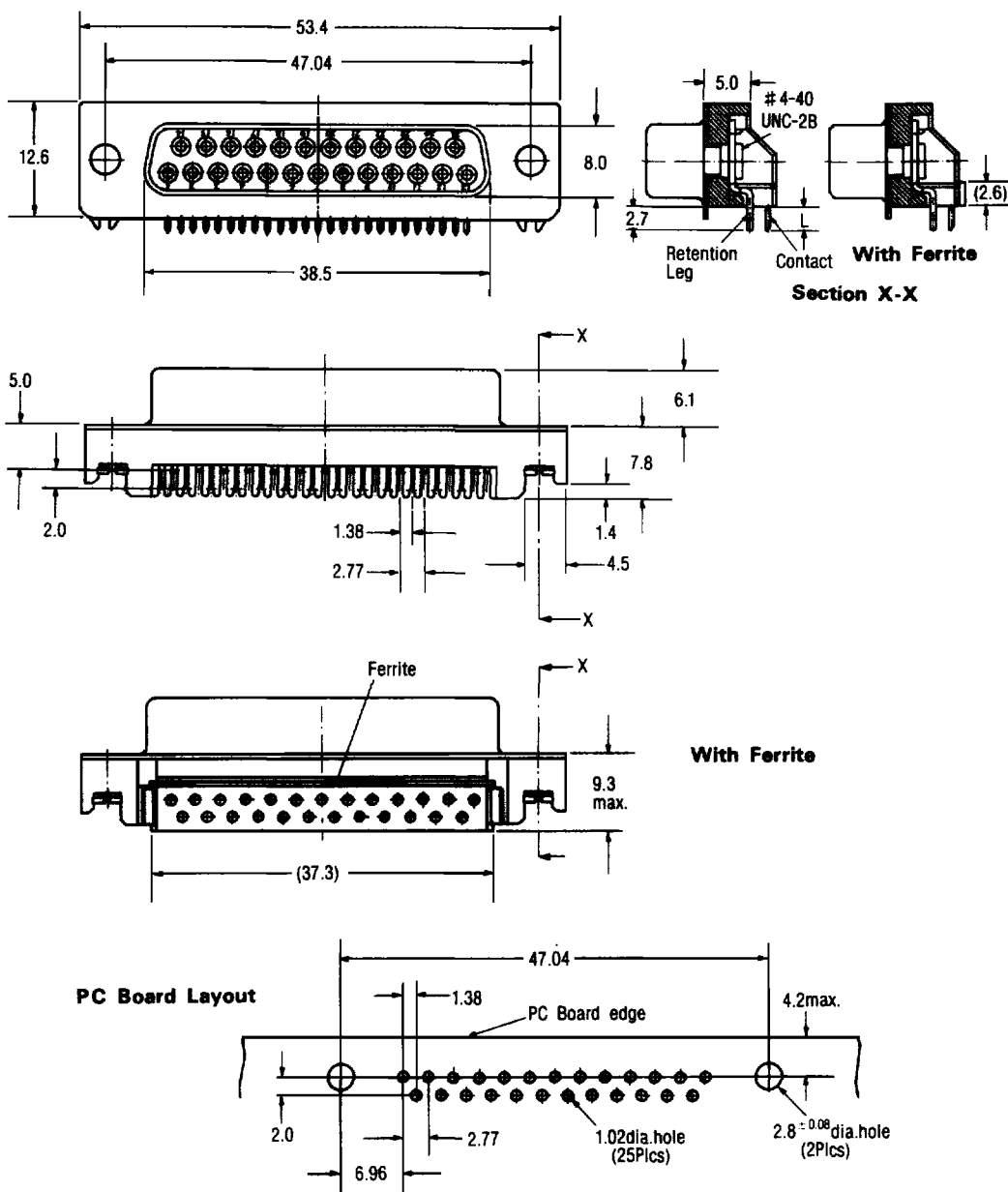
Shell—Carbon steel, tin plated

Contact—

Copper alloy, gold flash or gold plated (see chart) over nickel plated, tin-lead on post area

Retention Leg—

Copper alloy, tin-lead



No. of Position	Dimension L	Applicable Board thickness	Contact Finish	Part Numbers
25	2.15	1.2	0.76 μ m Gold	177512-9
			Gold flash	177615-9*
	2.80	1.2~1.6	Gold flash	177817-3
			0.76 μ m Gold	177817-9

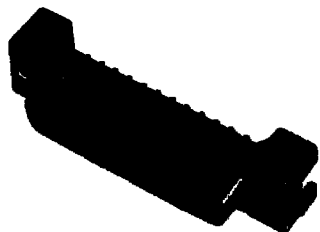
* With ferrite.

Wire to Board Connectors

AMPLIMITE Subminiature D HD-20 Connectors/ III-J

PC Board Application Receptacle Connectors (Female Type)/Horizontal Type

Slim Type



Material and Finish:

Housing—Thermoplastic
Shell—Carbon steel, tin plated
Contact—

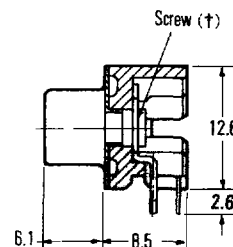
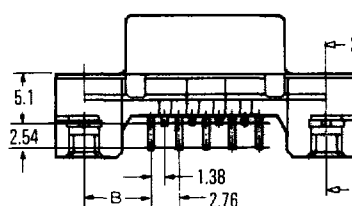
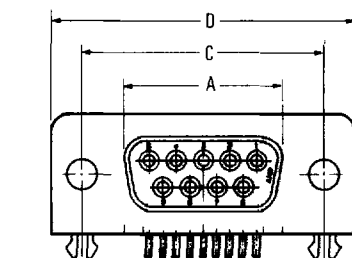
Copper alloy, gold flash or
gold plated(see chart)over
nickel plated, tin-lead on
post area

Retention Leg—

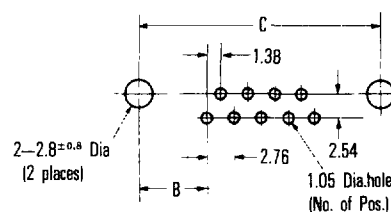
Copper alloy, tin-lead.

Product specifications:

108-5364



Section X-X



PC Board Layout

(PC Board thickness = 1.2 to 1.6mm)

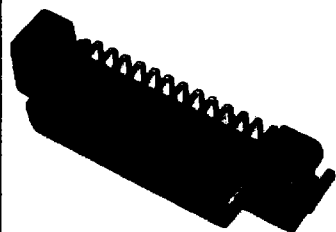
No. of Pos. (Shell Size)	Contact Finish	Screw (†)	Dimensions				Part No. *
			A	B	C	D	
9 (1)	Gold flash	M3	16.5	6.98	24.99	31.2	178769-1
		M2.6					178769-2
		#4-40					178769-3
	0.38μm Gold	M3	16.5	6.98	24.99	31.2	178769-4
		M2.6					178769-5
		#4-40					178769-6
15 (2)	Gold flash	M3	24.8	7.00	33.32	39.5	178770-1
		M2.6					178770-2
		#4-40					178770-3
	0.38μm Gold	M3	24.8	7.00	33.32	39.5	178770-4
		M2.6					178770-5
		#4-40					178770-6
25 (3)	Gold flash	M3	38.5	6.96	47.04	53.4	178771-1
		M2.6					178771-2
		#4-40					178771-3
	0.38μm Gold	M3	38.5	6.96	47.04	53.4	178771-4
		M2.6					178771-5
		#4-40					178771-6

Wire to Board Connectors

AMPLIMITE Subminiature D HD-20 Connectors/ III-J

PC Board Application Receptacle Connectors (Female Type)/Horizontal Type

Standard Type



Material and Finish:

Housing—Thermoplastic

Shell—Carbon steel, tin plated

Contact—

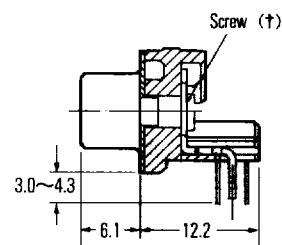
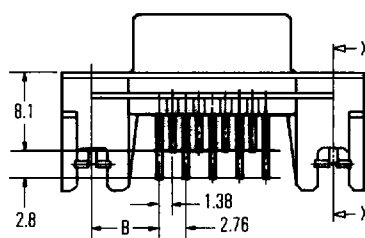
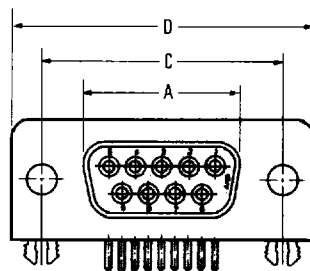
Copper alloy, gold flash or
gold plated(see chart)over
nickel plated, tin-lead on
post area

Retention Leg—

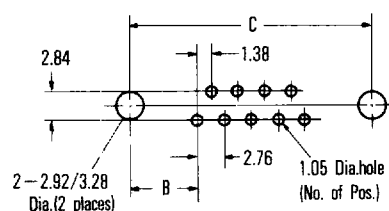
Copper alloy, tin-lead.

Product specifications:

108-5364



Section X-X



PC Board Layout

(PC Board thickness= 1.2 to 1.6mm)

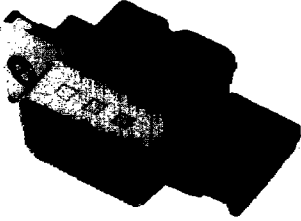
No. of Pos. (Shell Size)	Contact Finish	Screw (†)	Dimensions				Part No. *
			A	B	C	D	
9 (1)	Gold flash	M3	16.5	6.98	24.99	31.2	178733-1
		M2.6					178733-2
		#4-40					178733-3
	0.38 μ m Gold	M3	16.5	6.98	24.99	31.2	178733-4
		M2.6					178733-5
		#4-40					178733-6
15 (2)	Gold flash	M3	24.8	7.00	33.32	39.5	178734-1
		M2.6					178734-2
		#4-40					178734-3
	0.38 μ m Gold	M3	24.8	7.00	33.32	39.5	178734-4
		M2.6					178734-5
		#4-40					178734-6
25 (3)	Gold flash	M3	38.5	6.96	47.04	53.4	178735-1
		M2.6					178735-2
		#4-40					178735-3
	0.38 μ m Gold	M3	38.5	6.96	47.04	53.4	178735-4
		M2.6					178735-5
		#4-40					178735-6

Wire to Board Connectors

AMPLIMITE Subminiature D HD-20 Connectors/ III-J

PC Board Application Plug Connectors (Male Type) / Horizontal Type

Without Mounting Screw



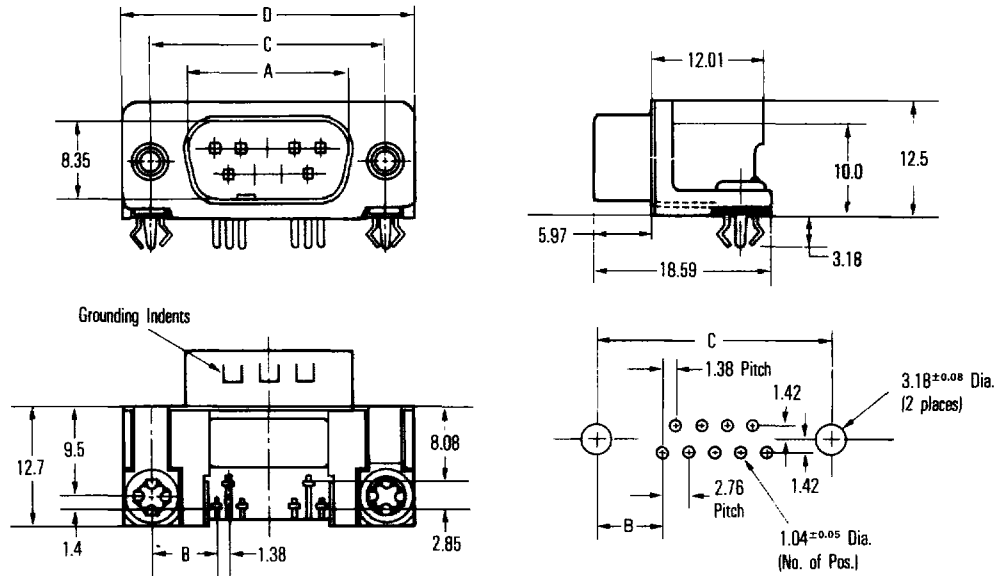
Material and Finish:

Housing—Thermoplastic
Shell—Carbon steel, tin plated
Contact—

Copper alloy, gold flash or
gold plated(see chart)over
nickel plated, tin-lead on
post area

Retention Leg—

Copper alloy, tin-lead



PC Board Layout

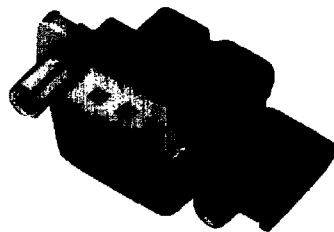
No. of Pos. (Shell Size)	Contact Finish	Dimensions				Part No.
		A	B	C	D	
9 (1)	Gold flash	16.91	6.98	24.99	31.00	177028-2
	0.4 μm gold					177028-4
	0.76 μm gold					177028-1
15 (2)	Gold flash	25.24	7.01	33.32	39.37	177029-2
	0.4 μm gold					177029-4
	0.76 μm gold					177029-1
25 (3)	Gold flash	38.96	6.96	47.04	53.09	177030-2
	0.4 μm gold					177030-4
	0.76 μm gold					177030-1
37 (4)	Gold flash	55.42	6.91	63.50	69.54	177031-2
	0.4 μm gold					177031-4
	0.76 μm gold					177031-1

Wire to Board Connectors

AMPLIMITE Subminiature D HD-20 Connectors/ III-J

PC Board Application Plug Connectors (Male Type) /Horizontal Type

With Mounting Screw



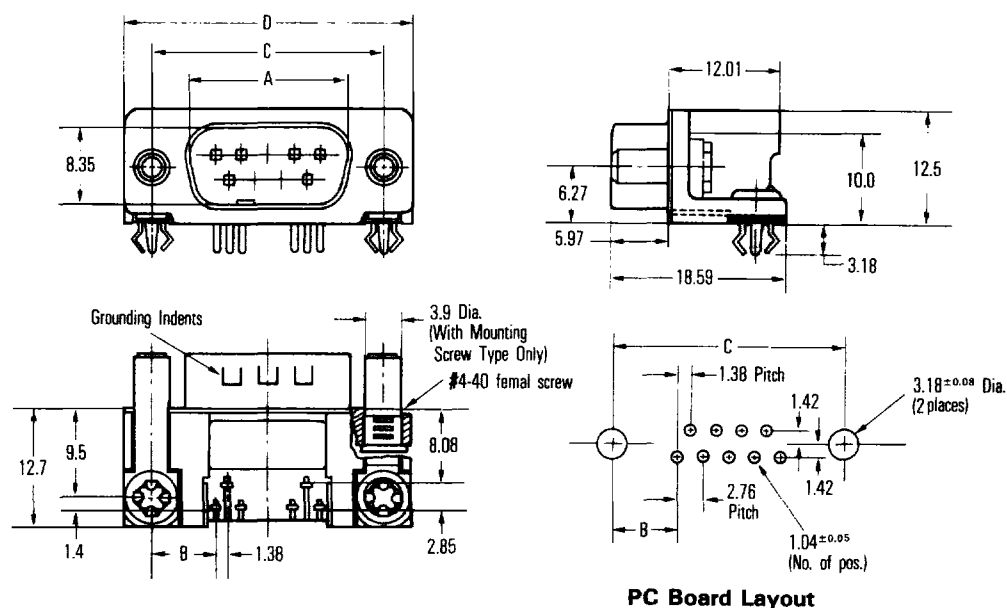
Material and Finish:

Housing—Thermoplastic
Shell—Carbon steel, tin plated
Contact—

Copper alloy, gold flash or
gold plated(see chart)over
nickel plated, tin-lead on
post area

Retention Leg—

Copper alloy, tin-lead.



PC Board Layout

No. of Pos. (Shell Size)	Contact Finish	Dimensions				Part No.
		A	B	C	D	
9 (1)	Gold flash					177036-2
	0.4 μ m gold	16.91	6.98	24.99	31.00	177036-4
	0.76 μ m gold					177036-1
15 (2)	Gold flash					177037-2
	0.4 μ m gold	25.24	7.01	33.32	39.37	177037-4
	0.76 μ m gold					177037-1
25 (3)	Gold flash					177038-2
	0.4 μ m gold	38.96	6.96	47.04	53.09	177038-4
	0.76 μ m gold					177038-1
37 (4)	Gold flash					177039-2
	0.4 μ m gold	55.42	6.91	63.50	69.54	177039-4
	0.76 μ m gold					177039-1

Wire to Board Connectors

AMPLIMITE Subminiature D HD-22 Connectors/III-J

PC Board Application Receptacle Connectors (Female Type)/Horizontal Type

U-Slim Type

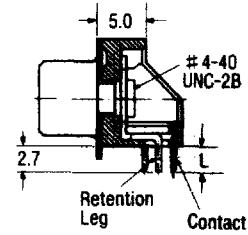
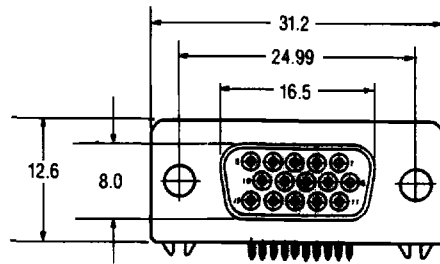
Standard "D" Shaped Type For 15 position



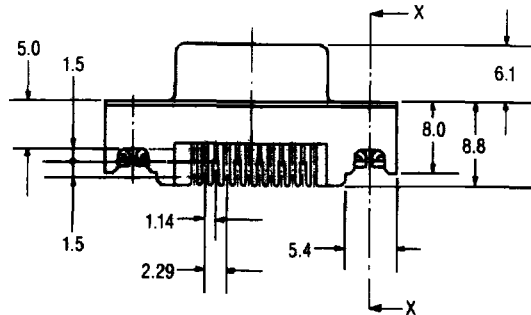
Material and Finish:

Housing—Thermoplastic
Shell—Carbon steel, tin plated
Contact—
Copper alloy, gold flash or gold plated (see chart) over nickel plated, tin-lead on post area
Retention Leg—
Copper alloy, tin-lead

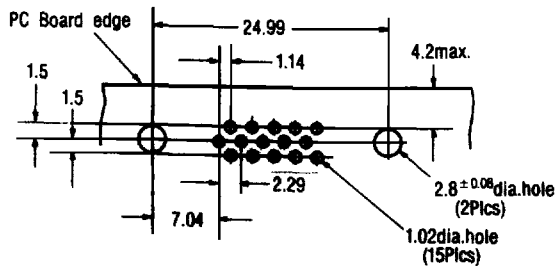
Product Specifications:
108-5401



Section X-X



PC Board Layout



No. of Position	Connector Type	Dimension L	Applicable Board thickness	Contact Finish	Part Numbers
15	Standard "D" Shaped	1.8	1.2	0.7 μ m Gold	177514-9
					2-177514-9***
		2.8	1.2~1.6	Gold flash	177802-3
				0.76 μ m Gold	3-177802-3***
	Reverse "D" Shaped	1.8	1.2	0.76 μ m Gold	177894-9

***Incorporates feature to prevent mis-insertion.
2-177514-9 : stop up circuit No.4 and No.9 cavities.
3-177802-3 : stop up circuit No.9 cavity.
*Nickel plated finish shell.

Wire to Board Connectors

AMPLIMITE Subminiature D HD-22 Connectors/III-J

PC Board Application Receptacle Connectors (Female Type)/Horizontal Type

15 Position (Shell Size 1) Without Mounting Screw



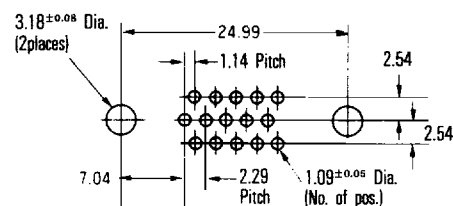
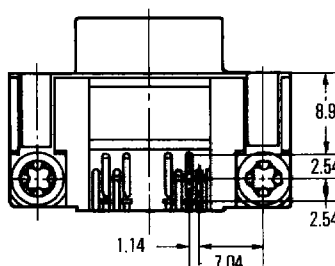
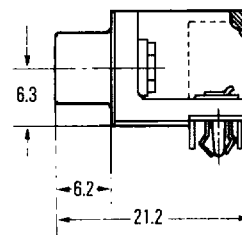
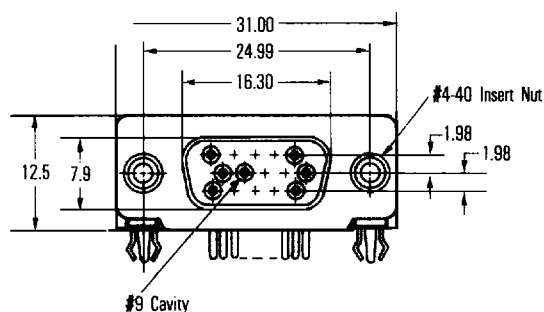
Material and Finish:

Housing—Thermoplastic
Shell—Carbon steel, tin plated
Contact—

Copper alloy, gold flash or
gold plated(see chart)over
nickel plated, tin-lead on
post area

Retention Leg—

Copper alloy, tin-lead.



PC Board Layout

Type of Connector	Part Number		
	Gold Flash*	0.4μm gold*	0.76μm gold*
Standard Type	177017-1	177017-3	177017-5
#9 Cavity Stopper Type	177021-1	177021-3	177021-5

*Indicates the plating thickness on mating areas of the contact.

Wire to Board Connectors

AMPLIMITE Subminiature D HD-20&22 Connectors/ III-J

For PC Board Application Accessories

Screw Lock Sets (2 Each)

Material and Finish:
Steel, nickel plated

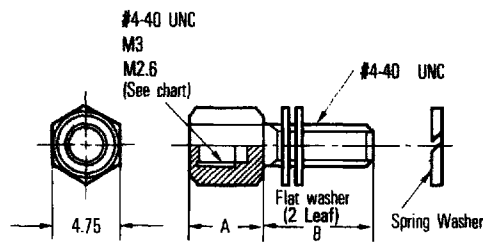


Figure 1

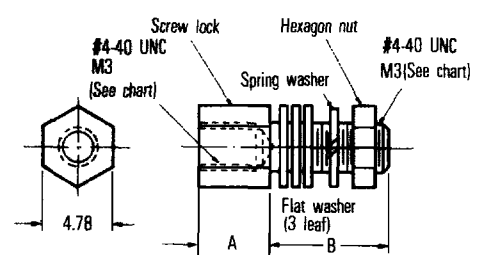


Figure 2

Figure	Dimensions		Screw	Part Number
	A	B		
1	4.78	7.92	#4-40/#4-40	176152-1
			M3/#4-40	176152-2
			M2.6/#4-40	176152-3
2	4.78	7.92	#4-40/#4-40	172616-1
			M3/M3	172616-5

Screw Lock (One Each)

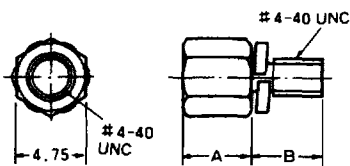


Figure 1

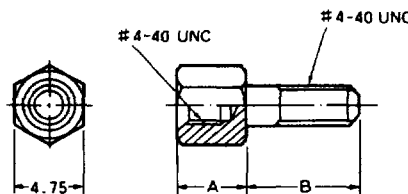


Figure 2

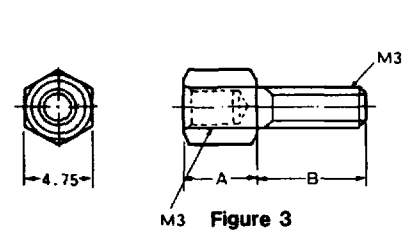


Figure 3

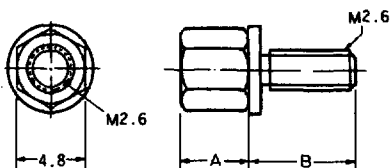


Figure 4

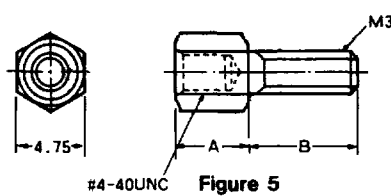


Figure 5

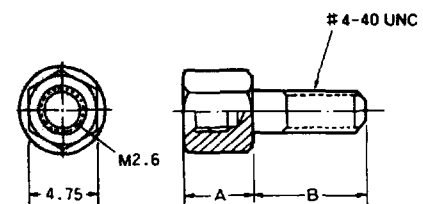


Figure 6

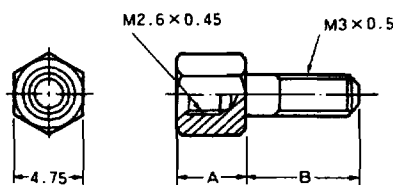


Figure 7

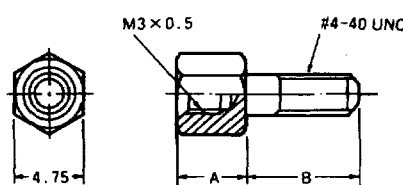


Figure 8

Material and Finish:
Steel, nickel plated

Figure	Dimensions		Screw	Part Number
	A	B		
1	4.8	5.0	#4-40/#4-40	178877-1
		7.9		178877-2
2	4.78	7.92	#4-40/#4-40	172617-1
3		9.92	M3/M3	173088-1
4	5.0	7.5	M2.6/#2.6	178948-1
5	4.78	7.92	#4-40/M3	174888-1
6			M2.6/#4-40	174327-1
7			M2.6/M3	173867-4
8			M3/#4-40	173034-1