



Subminiature-D

Accu-Glass 9 to 100 Pin Feedthrough

UHV Feedthrough, 100200
Conflat® compatible flange



Air-service female cable
assembly, 101040,
composite connector and
nine conductor cable⁶

UHV female cable assembly,
100330, PEEK connector and
Kapton® Insulated wire⁶

Subminiature-D Interface

Accu-Glass Products' UHV 9, 15, 25 and 50-pin Subminiature-D instrumentation feedthroughs are constructed with pin arrangements per Mil-DTL-24308 (formerly Mil-C-24308) specification. All pins are gold-plated and arranged in a straight through pin-to-pin design, hermetically sealed and electrically insulated into a stainless steel shell using the latest in glass-ceramic bonding technology. Ultrahigh vacuum compatible cable assemblies are fitted with PEEK (polyether etherketone) polymer connectors and Kapton® insulated ribbon cable to meet the rigorous demands of ultrahigh vacuum environments. Each Subminiature-D vacuum connector includes two (2) captured stainless steel socket head screws that securely lock a connector to its mating feedthrough. To eliminate virtual leaks, in-vacuum captured screws are vented where required.

Subminiature-D multipin assemblies with up to 250 pin configurations are routinely fabricated. Custom solutions with over 1,000 pins have also been engineered and produced.

Tip: Accu-Glass Products' Conflat CF and/or ISO KF/LF "Conical Reducers" are ideally suited for the expansion of feedthrough capacity on smaller chamber flanges... like fitting a 50-pin 4.50-inch CF flange mounted feedthrough using a 2.75-inch CF chamber port. See pages 225 and 234 for AGP's CF and ISO conical reducers.

Features

- Subminiature-D 9 to 100 Pin configuration
- High temperature rated to 250°C
- UHV compatible construction
- Conflat® and ISO NW compatible mounts
- Kapton® insulated vacuum cables
- PEEK connector with locking screws
- Air-service cable assemblies

Specifications

Electrical

Voltage ¹ , Maximum	500 VDC
Current ² , Per Pin Maximum @ 20°C	5 A

Material

Shell	304 Stainless Steel
Pins	Au plated, Ni-Fe alloy
Seal / Insulator	Glass-Ceramic
Connector, Air	Composite
Connector, Vacuum, UHV ³	PEEK
Connector, Vacuum, HV ³	DAP / Stainless Steel

Vacuum Range⁴

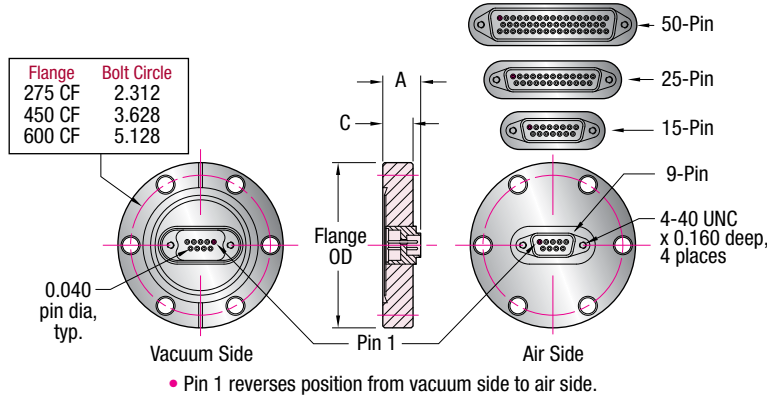
UHV, Ultrahigh vacuum	1x10 ⁻¹⁰ Torr
HV, High vacuum	1x10 ⁻⁸ Torr

Temperature Range⁵

Feedthrough	-200 to 250°C
Flange Mount, Conflat®	-200 to 450°C
Flange Mount, ISO	150°C
Connector / Cable, Air	80°C
Connector / Cable, Vacuum, PEEK	250°C
Connector / Cable, Vacuum, DAP	125°C
Thermal Gradient	25°C / Minute Maximum

Notes

1. Electrical ratings are maximum test values, with vacuum side at $\leq 1 \times 10^{-4}$ Torr. Feedthroughs are intended for instrumentation applications carrying low level signal voltage and current.
 2. For proper heat dissipation, a maximum of 20% of the pins on a feedthrough may carry the maximum pin current at any given time.
 3. PEEK is a polyether ether ketone thermoplastic. DAP is a glass-filled diallyl phthalate.
 4. Leak tested to 5×10^{-10} Standard cc/sec of He.
 5. Overall assembly ratings must be adjusted to that of its lowest rated component. For cryogenic service, the lowest recommended temperature is -200°C
 6. Unless designated a 'kit,' connectors and cable assemblies are not included with feedthrough and must be purchased separately.
- § Unless specified otherwise, dimensional units in all sections of this catalog are expressed in inches.



100200 / 9-Pin (Air Side)



100225 / 2 x 25-Pin (Vacuum Side)



113290 / Gasket Installation Clips
See Page 231



200760 / Copper Gasket



200763 / Viton® Gasket

CF Flange — 9 to 100 Pin / 500 VDC, 5 Amp / 250°C / UHV to 1x10⁻¹⁰ Torr

Number Contacts	Flange Type	OD	A	C	Model Number	Part Number	Unit Price \$
-----------------	-------------	----	---	---	--------------	-------------	---------------

Feedthrough — Feedthrough without Cables

9	275 CF	2.73	0.63	0.50	9D-275	100200	295
15	338 CF	3.36	0.76	0.68	15D-338	100209	375
15	450 CF	4.47	0.76	0.68	15D-450	100210	350
18 ¹	450 CF	4.47	0.76	0.68	9D2-450	100213	680
25	450CF	4.47	0.76	0.68	25D-450	100220	375
30 ¹	450 CF	4.47	0.76	0.68	15D2-450	100212	710
40 ¹	450 CF	4.47	0.76	0.68	25D-15D-450	100226	850
50 ¹	450 CF	4.47	0.76	0.68	25D2-450	100225	730
15	462 CF	4.62	0.76	0.68	15D-462	100215	375
25	462 CF	4.62	0.76	0.81	25D-462	112665	425
25	600 CF	5.97	0.86	0.78	25D-600	100228	455
50	600 CF	5.97	0.86	0.78	50D-600	100230	605
50 ¹	600 CF	5.97	0.86	0.78	25D2-600	100227	750
100 ¹	600 CF	5.97	0.86	0.78	50D2-600	100234	1200

1. Uses two feedthroughs

Mounting Hardware — Gaskets and Fasteners

Flange Type	Pkg Qty	Part Number	Unit Price \$	Pkg Qty	Part Number	Unit Price \$	Pkg Qty	Part Number	Unit Price \$
-------------	---------	-------------	---------------	---------	-------------	---------------	---------	-------------	---------------

Hardware	Copper Gasket	Viton® Gasket	Fasteners ²
275 CF	10 200760¹ 19	5 200763 18	24 200764 33
338 CF	10 200780 22	1 200782 14	32 200783 44
450 CF	10 200810¹ 34	1 200812 16	32 200813 47
462 CF	10 200830 37	1 200832 16	40 200833 53
600 CF	10 200850¹ 47	1 200852 18	32 200853 47

1. See page 230 for larger ID gaskets. 2. Includes bolts, nuts, and washers



100211 / 15-Pin (Vacuum Side)



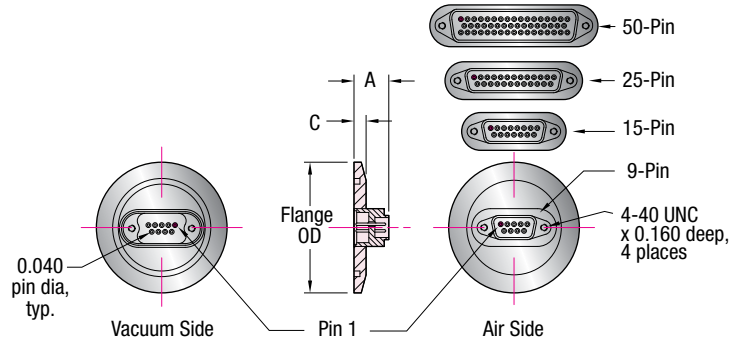
100231 / 50-Pin (Air Side)



202220 / ISO KF Centering Ring Assembly
210550 / ISO LF Double Claw Clamp



202225 / ISO KF Hinged Clamp



• Pin 1 reverses position from vacuum side to air side.

ISO KF / LF Flange — 9 to 100 Pin / 500 VDC, 5 Amp / 150°C / HV to 1x10⁻⁸ Torr

Number Contacts	Flange Type	OD	A	C	Model Number	Part Number	Unit Price \$
-----------------	-------------	----	---	---	--------------	-------------	---------------

Feedthrough — Feedthrough without Cables

9	NW40 KF	2.16	0.59	0.20	9D-K40	100201	290
9	NW50 KF	2.95	0.59	0.20	9D-K50	100238	315
15	NW50 KF	2.95	0.59	0.20	15D-K50	100211	315
18 ¹	NW50 KF	2.95	0.59	0.20	9D2-K50	100239	660
24 ¹	NW50 KF	2.95	0.59	0.20	9D-15D-K50	100236	690
15	NW63 LF	3.74	0.59	0.47	15D-L63	100214	380
25	NW63 LF	3.74	0.59	0.47	25D-L63	100221	375
30 ¹	NW63 LF	3.74	0.59	0.47	15D2-L63	111007	710
50	NW100 LF	5.12	0.59	0.47	50D-L100	100231	605
50 ¹	NW100 LF	5.12	0.59	0.47	25D2-L100	100237	730
75 ¹	NW100 LF	5.12	0.59	0.47	25D3-L100	112708	1390
100 ¹	NW100 LF	5.12	0.59	0.47	50D2-L100	100235	1200

1. Uses two feedthroughs

Mounting Hardware — Centering Rings and Clamps¹

Flange Type	Pkg Qty	Part Number	Unit Price \$	Pkg Qty	Part Number	Unit Price \$
-------------	---------	-------------	---------------	---------	-------------	---------------

ISO KF —

Centering Ring

Hinged Clamp

NW40 KF	1	202220	12	1	202225	9
NW50 KF	1	202230	15	1	202235	15

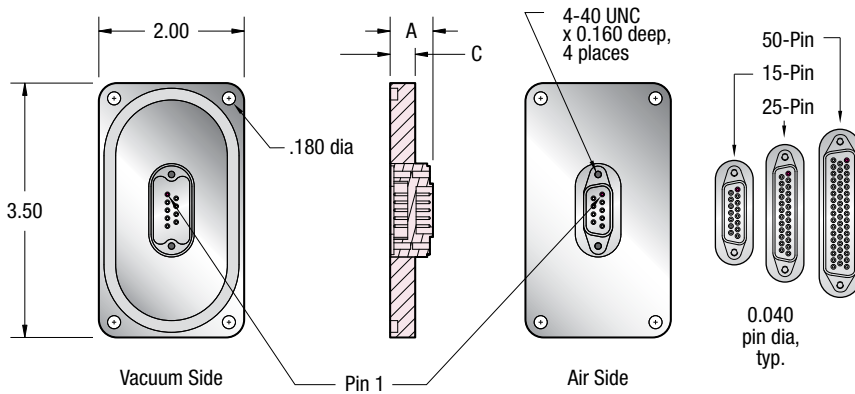
ISO LF —

Centering Ring

Claw Clamp

NW63 LF	1	202240	55	1	210550	8
NW100 LF	1	202262	70	1	210550	8

1. See Pages 236 and 237 for other size centering rings and clamps



• Pin 1 reverses position from vacuum side to air side.



113090, 113091, 113092, 113093 /
9, 15, 25, 50-Pin (Vacuum Side)

Bulkhead-D™ Flange — 9 to 50 Pin / 500 VDC, 5 Amp / 150°C / HV to 1x10⁻⁹ Torr

Number Contacts	Flange Type	OD	A	C	D	Model Number	Part Number	Unit Price \$
-----------------	-------------	----	---	---	---	--------------	-------------	---------------

Feedthrough — Gasket and Fasteners Included¹

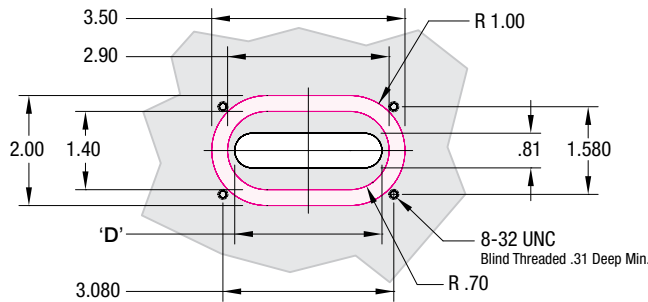
9	Rectangular	2 x 3.50	0.59	0.34	1.47	9D-RECT	113090	350
15	Rectangular	2 x 3.50	0.59	0.34	1.80	15D-RECT	113091	410
25	Rectangular	2 x 3.50	0.59	0.34	2.34	25D-RECT	113092	440
50	Rectangular	2 x 3.50	0.59	0.34	2.84	50D-RECT	113093	570

1. Cables and connectors sold separately



113092 / 25-Pin
(O-Ring and Fasteners Included)

Bulkhead-D™
Air-side chamber wall /
bulkhead machining detail
□ 32 Ra Circular Finish



Mounting Hardware — Spare Gaskets and Fasteners

Flange Type	Pkg Qty	Description	Part Number	Unit Price \$
-------------	---------	-------------	-------------	---------------

Gasket — Viton O-Ring

Rectangular	1	Viton Elastomer Compound	113096	4
-------------	---	--------------------------	---------------	---

Fasteners — Bolts and Washers

Rectangular	4	5/8" Long, 8-32 Socket Head Screw / Washers	113097	3
-------------	---	---	---------------	---

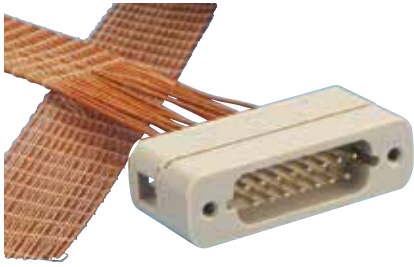


113096 / Viton O-Ring

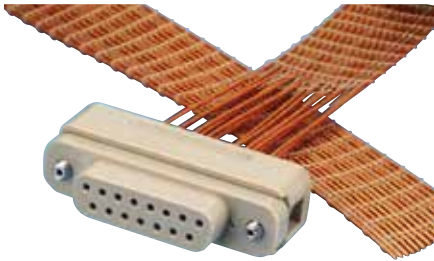


113097 / Bolts and Washers

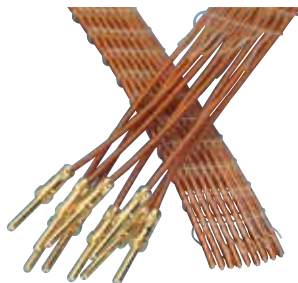
Instrumentation



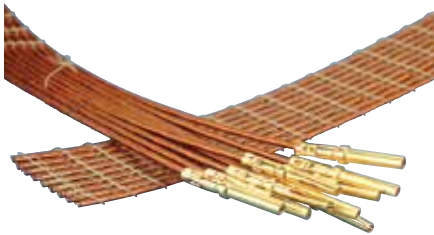
100340 / Male Pin UHV Connector to Cable



100350 / Female Socket UHV Connector to Cable



100240 / Male Pin UHV Contact to Cable



100250 / Female Socket UHV Contact to Cable

Ultrahigh Vacuum Ribbon Cable Assemblies

Connector to Cable UHV ribbon cable assemblies are fitted with PEEK Subminiature-D connectors at one end and non-terminated, Kapton® insulated ribbon cable at the other. Female cable connectors mate directly to vacuum-side of Subminiature-D feedthroughs or with male in-vacuum cable connectors. Ribbon cables are Kapton® insulated 28 AWG silver plated copper conductors, stranded 7 x 0.005. Cable leads are woven together using a 0.008 inch nominal diameter PEEK monofilament.

Contact to Cable UHV ribbon cable assemblies do not include PEEK connectors.

Ribbon Cable Assemblies — 250°C / UHV to 1x10⁻¹⁰ Torr

Number Contacts	Wire		Connector		Model Number	Part Number	Unit Price \$
	Length	Dimensions	Gender	W x H x D			

Connector to Cable

9	19	0.04 x 0.40	M	1.30 x 0.50 x 0.75	KAP-R9-19PC	100320	210
9	39	0.04 x 0.40	M	1.30 x 0.50 x 0.75	KAP-R9-39PC	100321	265
9	19	0.04 x 0.40	F	1.30 x .050 x .075	KAP-R9-19SC	100330	210
9	39	0.04 x 0.40	F	1.30 x 0.50 x 0.75	KAP-R9-39SC	100331	265
15	19	0.04 x 0.74	M	1.70 x 0.50 x 0.75	KAP-R15-19PC	100340	260
15	39	0.04 x 0.74	M	1.70 x 0.50 x 0.75	KAP-R15-39PC	100341	325
15	19	0.04 x 0.74	F	1.70 x 0.50 x 0.75	KAP-R15-19SC	100350	260
15	39	0.04 x 0.74	F	1.70 x 0.50 x 0.75	KAP-R15-39SC	100351	325
25	19	0.04 x 1.20	M	2.20 x 0.50 x 0.75	KAP-R25-19PC	100360	325
25	39	0.04 x 1.20	M	2.20 x 0.50 x 0.75	KAP-R25-39PC	100361	415
25	19	0.04 x 1.20	F	2.20 x 0.50 x 0.75	KAP-R25-19SC	100370	325
25	39	0.04 x 1.20	F	2.20 x 0.50 x 0.75	KAP-R25-39SC	100371	415
50 ¹	19	0.08 x 1.20	M	2.70 x 0.50 x 0.75	KAP-R50-19PC	100380	545
50 ¹	39	0.08 x 1.20	M	2.70 x 0.50 x 0.75	KAP-R50-39PC	100381	730
50 ¹	19	0.08 x 1.20	F	2.70 x 0.50 x 0.75	KAP-R50-19SC	100390	545
50 ¹	39	0.08 x 1.20	F	2.70 x 0.50 x 0.75	KAP-R50-39SC	100391	730

Contact to Cable

9	19	0.04 x 0.40	M	Pin Contact	KAP-R9-19P	100240	75
9	39	0.04 x 0.40	M	Pin Contact	KAP-R9-39P	100241	125
9	19	0.04 x 0.40	F	Socket Contact	KAP-R9-19S	100250	75
9	39	0.04 x 0.40	F	Socket Contact	KAP-R9-39S	100251	125
15	19	0.04 x 0.74	M	Pin Contact	KAP-R15-19P	100260	100
15	39	0.04 x 0.74	M	Pin Contact	KAP-R15-39P	100261	170
15	19	0.04 x 0.74	F	Socket Contact	KAP-R15-19S	100270	100
15	39	0.04 x 0.74	F	Socket Contact	KAP-R15-39S	100271	170
25	19	0.04 x 1.20	M	Pin Contact	KAP-R25-19P	100280	150
25	39	0.04 x 1.20	M	Pin Contact	KAP-R25-39P	100281	240
25	19	0.04 x 1.20	F	Socket Contact	KAP-R25-19S	100290	150
25	39	0.04 x 1.20	F	Socket Contact	KAP-R25-39S	100291	240
50 ^{1,2}	19	0.08 x 1.20	M	Pin Contact	KAP-R50-19P	100300	295
50 ^{1,2}	39	0.08 x 1.20	M	Pin Contact	KAP-R50-39P	100301	480
50 ^{1,2}	19	0.08 x 1.20	F	Socket Contact	KAP-R50-19S	100310	295
50 ^{1,2}	39	0.08 x 1.20	F	Socket Contact	KAP-R50-39S	100311	480

See page 18 for **Specifications**

See page 94 for **Cable Specs**

1. Uses two lengths of 25-way ribbon cable 2. Does not allow subsequent connector installation, as wires must be threaded through the connector back-piece before crimping contacts

Ultrahigh Vacuum Ribbon Extension Cable Assemblies

Connector to Connector Extension Cables are fitted with PEEK Subminiature-D connectors on both ends of a 19 or 39 inch UHV Kapton® insulated ribbon cable. Female cable connectors mate directly to vacuum-side of Subminiature-D feedthroughs or with male in-vacuum cable connectors. Ribbon cables are Kapton® insulated 28 AWG silver plated copper conductors, stranded 7 x 0.005. Cable leads are woven together using a 0.008 inch nominal diameter PEEK monofilament.

Extension Ribbon Cable Assemblies — 250°C / UHV to 1x10⁻¹⁰ Torr

Number Contacts	Wire		Connector		Model Number	Part Number	Unit Price \$
	Length	Dimensions	Gender	W x H x D			
Connector to Connector Extension Cable							
9	19	0.04 x 0.40	F / F	1.30 x 0.50 x 0.75	KAP-R9-192SC	100880	345
9	39	0.04 x 0.40	F / F	1.30 x 0.50 x 0.75	KAP-R9-392SC	100881	400
9	19	0.04 x 0.40	F / M	1.30 x 0.50 x 0.75	KAP-R9-19SCPC	112494	345
9	39	0.04 x 0.40	F / M	1.30 x 0.50 x 0.75	KAP-R9-39SCPC	112495	400
15	19	0.04 x 0.74	F / F	1.70 x 0.50 x 0.75	KAP-R15-192SC	100890	450
15	39	0.04 x 0.74	F / F	1.70 x 0.50 x 0.75	KAP-R15-392SC	100891	515
15	19	0.04 x 0.74	F / M	1.70 x 0.50 x 0.75	KAP-R15-19SCPC	112496	450
15	39	0.04 x 0.74	F / M	1.70 x 0.50 x 0.75	KAP-R15-39SCPC	112497	515
25	19	0.04 x 1.20	F / F	2.20 x 0.50 x 0.75	KAP-R25-192SC	100900	560
25	39	0.04 x 1.20	F / F	2.20 x 0.50 x 0.75	KAP-R25-392SC	100901	650
25	19	0.04 x 1.20	F / M	2.20 x 0.50 x 0.75	KAP-R25-19SCPC	112498	560
25	39	0.04 x 1.20	F / M	2.20 x 0.50 x 0.75	KAP-R25-39SCPC	112499	650
50 ¹	19	0.08 x 1.20	F / F	2.70 x 0.50 x 0.75	KAP-R50-192SC	100480	915
50 ¹	39	0.08 x 1.20	F / F	2.70 x 0.50 x 0.75	KAP-R50-392SC	100481	1100
50 ¹	19	0.08 x 1.20	F / M	2.70 x 0.50 x 0.75	KAP-R50-19SCPC	100482	915
50 ¹	39	0.08 x 1.20	F / M	2.70 x 0.50 x 0.75	KAP-R50-39SCPC	112500	1100

1. Uses two lengths of 25-way ribbon cable

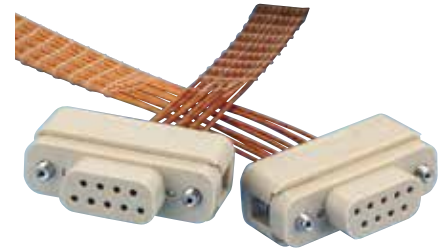
Ultrahigh Vacuum Gender Adapters, PEEK

Gender Adapters are offered for use with Accu-Glass Subminiature-D feedthroughs with male pins on both sides, to correct pin numbering to the standard Subminiature-D configuration. (Pin 1 reverses position from vacuum side to air side due to the male to male configuration.)

Ultrahigh vacuum gender adapters are made of UHV compatible PEEK material.

Gender Adapters — 250°C / UHV to 1x10⁻¹⁰ Torr

Number Contacts	W x H x D	Model Number	Part Number	Unit Price \$
Gender Adapters — PEEK Polymer Shell / Contacts included.				
9	1.30 x 0.40 x 1.20	9D-PK-GA	103102	175
15	1.60 x 0.40 x 1.20	15D-PK-GA	103112	190
25	2.10 x 0.40 x 1.20	25D-PK-GA	104101	215
50	2.07 x 0.50 x 1.20	50D-PK-GA	103132	310



100880 / Female to Female UHV Connector to Connector Extension Cable



112496 / Female to Male UHV Connector to Connector Extension Cable



104101 / Subminiature-D UHV Gender Adapter (Contacts Included)

See page 18 for **Specifications**

See page 94 for **Cable Specs**



100420 / Male Pin UHV Connector
(Contacts Sold Separately)



100470 / Female Socket UHV Connector
(Contacts Sold Separately)



100465 / PEEK Backshell Strain Relief on 100460,
Female Socket UHV Connector
(Connector and Backshell Sold Separately)



110905 / Macor Male Pin, UHV Connector
(Contacts Sold Separately)



112714 / Stainless Steel Backshell Strain Relief on
110904, Female Socket UHV Connector
(Connector and Backshell Sold Separately)

Ultrahigh Vacuum Connectors, PEEK

Components in this section are sold as the most basic components. Connectors do not include contacts and must be purchased separately. Connectors and Backshell units are made of UHV compatible PEEK material. High duty cycle stainless steel Type-T1 contacts are recommended for use in connectors where plug-in cycles exceed 3 cycles per day. • *The pins and sockets listed on next page are intended for use with ultrahigh vacuum PEEK connectors only.* • *See page 25 for connectors with ears for bulkhead mounting.*

Connectors — UHV to 1x10⁻¹⁰ Torr

Number Contacts	Connector		Use With	Model Number	Part Number	Unit Price \$
	Gender	W x H x D				

Connectors — PEEK Polymer Shell / 250°C

9	M	1.30 x 0.50 x 0.75	Type T1 Contacts	9D-PKP	100400	135
9	F	1.30 x 0.50 x 0.75	Type T1 Contacts	9D-PKS	100440	135
15	M	1.60 x 0.50 x 0.75	Type T1 Contacts	15D-PKP	100410	155
15	F	1.60 x 0.50 x 0.75	Type T1 Contacts	15D-PKS	100450	155
25	M	2.10 x 0.50 x 0.75	Type T1 Contacts	25D-PKP	100420	175
25	F	2.10 x 0.50 x 0.75	Type T1 Contacts	25D-PKS	100460	175
50	M	2.70 x 0.50 x 0.75	Type T1 Contacts	50D-PKP	100430	250
50	F	2.70 x 0.50 x 0.75	Type T1 Contacts	50D-PKS	100470	250

Backshell Strain Relief — PEEK Polymer Shell / 250°C

9	PEEK	1.00 x 0.65 x 1.25	100400, 100440	9D-PKBS	100445	80
15	PEEK	1.30 x 0.65 x 1.25	100410, 100450	15D-PKBS	100455	90
25	PEEK	1.90 x 0.65 x 1.25	100420, 100460	25D-PKBS	100465	100
50	PEEK	2.35 x 0.65 x 1.25	100430, 100470	50D-PKBS	100475	110

Ultrahigh Vacuum Connectors, Ceramic

Macor Ceramic Connectors are designed for high temperature and extreme environments not suitable for our standard PEEK connectors. These connectors are used with either non-insulated wire or with ceramic bead insulators found on page 115.

Connectors^{1,2} — Macor Ceramic / 400°C

9	M	1.30 x 0.51 x 0.75	Type T1 Contacts	9D-MCP	110901	260
9	F	1.30 x 0.51 x 0.75	Type T1 Contacts	9D-MCS	110900	260
15	M	1.60 x 0.51 x 0.75	Type T1 Contacts	15D-MCP	110903	300
15	F	1.60 x 0.51 x 0.75	Type T1 Contacts	15D-MCS	110902	300
25	M	2.10 x 0.51 x 0.75	Type T1 Contacts	25D-MCP	110905	320
25	F	2.10 x 0.51 x 0.75	Type T1 Contacts	25D-MCS	110904	320
50	M	2.70 x 0.51 x 0.75	Type T1 Contacts	50D-MCP	110907	410
50	F	2.70 x 0.51 x 0.75	Type T1 Contacts	50D-MCS	110906	410

Backshell Strain Relief — Stainless Steel / 400°C

9	S. Steel	1.00 x 0.65 x 1.25	100900, 100901	9D-SSBS	112712	140
15	S. Steel	1.30 x 0.65 x 1.25	100903, 100903	15D-SSBS	112713	160
25	S. Steel	1.90 x 0.65 x 1.83	100904, 100905	25D-SSBS	112714	180
50	S. Steel	2.40 x 0.65 x 1.83	100906, 100907	50D-SSBS	112715	225

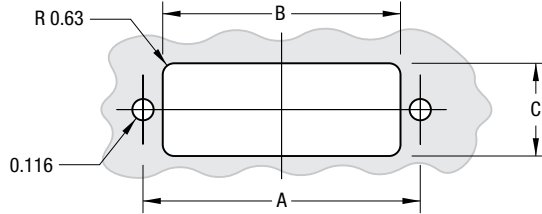
1. Wires must be threaded through the connector back-piece before crimping contacts. 2. Contacts on page 25 may also be used in macor connectors

See page 18 for **Specifications**

Ultrahigh Vacuum Panel Mount Connectors, PEEK

Panel Mount PEEK Connectors are wider than our standard PEEK connectors and are designed with a 4-40 mounting hole on each end to facilitate easy mounting into panels and bulkheads.

Panel Mount Machining Detail



112125 / Male Pin, UHV Connector with Mounting Ears (Contacts Sold Separately)

Panel Mount Connectors — 250°C / UHV to 1x10⁻¹⁰ Torr

Number Contacts	Connector		Panel Mount Dimensions			Model Number	Part Number	Unit Price \$
	Gender	W x H x D	A	B	C			

Panel Mount PEEK Connectors¹

9	M	1.70 x 0.48 x 0.75	1.510	1.295	0.505	9D-PKP-E	112125	160
15	M	2.10 x 0.48 x 0.75	1.807	1.625	0.505	15D-PKP-E	100423	175
25	M	2.60 x 0.48 x 0.75	2.330	2.105	0.505	25D-PKP-E	100421	190
50	M	3.20 x 0.50 x 0.75	2.906	2.680	0.530	50D-PKP-E	100431	270

1. Uses Type-T1 contacts below. Connector backshells on page 24. Female versions available (9D 100422, 15D 112126, 25D 112127, 50D 100471) but not recommended, as mating male connectors require jack screw modification



100421 / Male Pin, UHV Connector with Mounting Ears (Contacts Sold Separately)

Contacts, Type-T1^{1,2} — 250°C / UHV to 1x10⁻¹⁰ Torr

Number Contacts	Contact		Wire		Model Number	Part Number	Unit Price \$
	Gender	Dia.	Dia. / Gauge				

Contacts, Type-T1 — Standard / 10 per Pack

1 Pack	M	0.04	.043-.046 / 20-24 AWG	GP-10	100170	24
1 Pack	M	0.04	.023-.027 / 26-30 AWG	GP2-10	100171	24
1 Pack	F	0.04	.043-.046 / 20-24 AWG	GS-10	100180	24
1 Pack	F	0.04	.023-.027 / 26-30 AWG	GS2-10	100181	24

Contacts³, Type-T1 — High Duty Cycle / 10 per Pack

1 Pack	F	0.04	.043-.046 / 20-24 AWG	GS-10-S	110908	35
1 Pack	F	0.04	.023-.027 / 26-30 AWG	GS2-10-S	110909	35

1. For use in air or vacuum service connectors. 2. See page 109 for bulk packs. 3. High duty cycle stainless steel contacts require positioner DCT-P-2 on DCT-1 crimp tool.



100180 / Female Contacts
110908 / High Duty Cycle Contacts

Tools — for Wiring UHV Ribbon Vacuum Connectors

Contents	Description	Model Number	Part Number	Unit Price \$
1 Unit	Crimping tool for Type-T1 Contacts	DCT-1	100190	454
1 Unit	Crimp Tool Positioner for HDC Contacts ¹	DCT-POS-T2	111315	69
1 Unit	Wire Stripper, 26-36 AWG, .12-.40mm	2636AWG-STR	100191	95
1 Unit	Wire Stripper, 20-30 AWG, .25-.80mm	2030AWG-STR	100192	95
1 Set	Connector Screwdriver Set ²	DRV-SET	112146	27

1. Used with high duty cycle contacts, fits DCT-1 part number 100190. 2. Includes one each flat, phillips and hex drivers

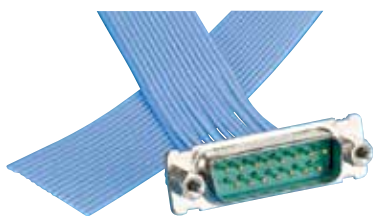


Set Dial to #5 ↗

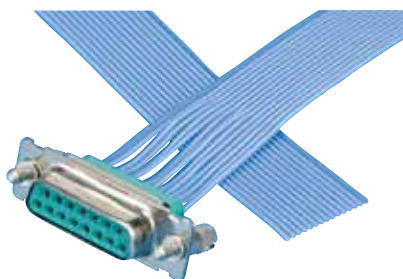
100190 / Contact Crimp Tool



112146 / Connector Screwdriver Set



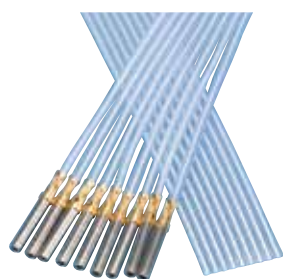
110025 / Male Pin HV Connector to Cable



110023 / Female Socket HV Connector to Cable



110050 / Male Pin HV Contact to Cable



110052 / Female Socket HV Contact to Cable

High Vacuum Ribbon Cable Assemblies

Connector to Cable HV (high vacuum) ribbon cable assemblies are fitted with a stainless steel shell and DAP insulated Subminiature-D connector at one end and non-terminated, Teflon® FEP insulated ribbon cable at the other. Female cable connectors mate directly to vacuum-side of Subminiature-D feedthroughs or with male in-vacuum cable connectors. Ribbon cables are FEP Teflon® insulated 28 AWG silver plated copper conductors, stranded 7 x 0.005.

Contact to Cable HV ribbon cables do not include connectors.

Ribbon Cable Assemblies — 125°C / HV to 1x10⁻⁸ Torr

Number Contacts	Wire		Connector		Model Number	Part Number	Unit Price \$
	Length	Dimensions	Gender	W x H x D			

Connector to Cable

9	19	0.03 x 0.45	M	1.22 x 0.50 x 0.61	HVB-R9-19PC	110021	94
9	39	0.03 x 0.45	M	1.22 x 0.50 x 0.61	HVB-R9-39PC	110022	121
9	19	0.03 x 0.45	F	1.22 x 0.50 x 0.61	HVB-R9-19SC	110019	115
9	39	0.03 x 0.45	F	1.22 x 0.50 x 0.61	HVB-R9-39SC	110020	142
15	19	0.03 x 0.75	M	1.55 x 0.50 x 0.61	HVB-R15-19PC	110025	125
15	39	0.03 x 0.75	M	1.55 x 0.50 x 0.61	HVB-R15-39PC	110026	142
15	19	0.03 x 0.75	F	1.55 x 0.50 x 0.61	HVB-R15-19SC	110023	145
15	39	0.03 x 0.75	F	1.55 x 0.50 x 0.61	HVB-R15-39SC	110024	162
25	19	0.03 x 1.25	M	2.10 x 0.50 x 0.61	HVB-R25-19PC	110029	185
25	39	0.03 x 1.25	M	2.10 x 0.50 x 0.61	HVB-R25-39PC	110030	244
25	19	0.03 x 1.25	F	2.10 x 0.50 x 0.61	HVB-R25-19SC	110027	195
25	39	0.03 x 1.25	F	2.10 x 0.50 x 0.61	HVB-R25-39SC	110028	254
50 ¹	19	0.06 x 1.25	M	2.65 x 0.60 x 0.61	HVB-R50-19PC	110033	335
50 ¹	39	0.06 x 1.25	M	2.65 x 0.60 x 0.61	HVB-R50-39PC	110034	453
50 ¹	19	0.06 x 1.25	F	2.65 x 0.60 x 0.61	HVB-R50-19SC	110031	350
50 ¹	39	0.06 x 1.25	F	2.65 x 0.60 x 0.61	HVB-R50-39SC	110032	468

Contact to Cable

9	19	0.03 x 0.45	M	Pin Contact	HVB-R9-19P	110050	50
9	39	0.03 x 0.45	M	Pin Contact	HVB-R9-39P	110051	77
9	19	0.03 x 0.45	F	Socket Contact	HVB-R9-19S	110052	50
9	39	0.03 x 0.45	F	Socket Contact	HVB-R9-39S	110053	77
15	19	0.03 x 0.75	M	Pin Contact	HVB-R15-19P	110054	77
15	39	0.03 x 0.75	M	Pin Contact	HVB-R15-39P	110055	114
15	19	0.03 x 0.75	F	Socket Contact	HVB-R15-19S	110056	77
15	39	0.03 x 0.75	F	Socket Contact	HVB-R15-39S	110057	114
25	19	0.03 x 1.25	M	Pin Contact	HVB-R25-19P	110058	125
25	39	0.03 x 1.25	M	Pin Contact	HVB-R25-39P	110059	184
25	19	0.03 x 1.25	F	Socket Contact	HVB-R25-19S	110060	125
25	39	0.03 x 1.25	F	Socket Contact	HVB-R25-39S	110061	184
50 ¹	19	0.06 x 1.25	M	Pin Contact	HVB-R50-19P	110062	250
50 ¹	39	0.06 x 1.25	M	Pin Contact	HVB-R50-39P	110063	368
50 ¹	19	0.06 x 1.25	F	Socket Contact	HVB-R50-19S	110064	250
50 ¹	39	0.06 x 1.25	F	Socket Contact	HVB-R50-39S	110065	368

1. Uses two lengths of 25-way ribbon cable

See page 18 for **Specifications**

See page 100 for **Cable Specs**

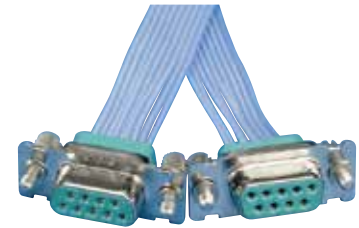
High Vacuum Extension Ribbon Cable Assemblies

Connector to Connector Extension Ribbon Cables are fitted with a stainless steel / DAP Subminiature-D connector on both ends of a 19 or 39 inch Teflon® FEP insulated ribbon cable. Female cable connectors mate directly to vacuum-side of Subminiature-D feedthroughs or with male in-vacuum cable connectors. Ribbon cable jacket / insulation is extruded FEP Teflon®, and conductors are stranded 7 x 0.005 28 AWG silver plated copper.

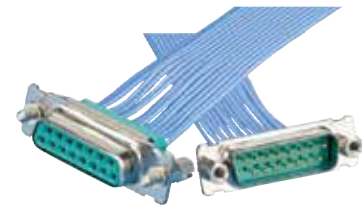
Extension Ribbon Cable Assemblies — 125°C / UHV to 1x10⁻⁸ Torr

Number Contacts	Wire		Connector		Model Number	Part Number	Unit Price \$
	Length	Dimensions	Gender	W x H x D			
Connector to Connector							
9	19	0.03 x 0.45	F / F	1.22 x 0.50 x 0.61	HVB-R9-192SC	110066	165
9	39	0.03 x 0.45	F / F	1.22 x 0.50 x 0.61	HVB-R9-392SC	110067	210
9	19	0.03 x 0.45	F / M	1.22 x 0.50 x 0.61	HVB-R9-19SCPC	112501	165
9	39	0.03 x 0.45	F / M	1.22 x 0.50 x 0.61	HVB-R9-39SCPC	112502	210
15	19	0.03 x 0.75	F / F	1.55 x 0.50 x 0.61	HVB-R15-192SC	110068	215
15	39	0.03 x 0.75	F / F	1.55 x 0.50 x 0.61	HVB-R15-392SC	110069	250
15	19	0.03 x 0.75	F / M	1.55 x 0.50 x 0.61	HVB-R15-19SCPC	112503	215
15	39	0.03 x 0.75	F / M	1.55 x 0.50 x 0.61	HVB-R15-39SCPC	112504	250
25	19	0.03 x 1.25	F / F	2.10 x 0.50 x 0.61	HVB-R25-192SC	110070	315
25	39	0.03 x 1.25	F / F	2.10 x 0.50 x 0.61	HVB-R25-392SC	110071	390
25	19	0.03 x 1.25	F / M	2.10 x 0.50 x 0.61	HVB-R25-19SCPC	112505	315
25	39	0.03 x 1.25	F / M	2.10 x 0.50 x 0.61	HVB-R25-39SCPC	112506	390
50 ¹	19	0.06 X 1.25	F / F	2.65 x 0.60 x 0.61	HVB-R50-192SC	110072	425
50 ¹	39	0.06 X 1.25	F / F	2.65 x 0.60 x 0.61	HVB-R50-392SC	110073	560
50 ¹	19	0.06 X 1.25	F / M	2.65 x 0.60 x 0.61	HVB-R50-19SCPC	112507	425
50 ¹	39	0.06 X 1.25	F / M	2.65 x 0.60 x 0.61	HVB-R50-39SCPC	112508	560

1. Uses two lengths of 25-way ribbon cable



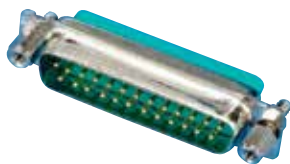
110066 / Female to Female HV
Connector to Connector Extension Cable



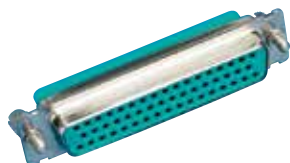
112503 / Female to Male HV
Connector to Connector Extension Cable

See page 18 for **Specifications**

See page 100 for **Cable Specs**



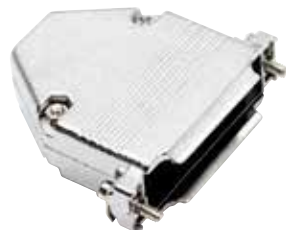
110004 / Male Pin HV Connector
(Contacts Sold Separately)



110007 / Female Socket HV Connector
(Contacts Sold Separately)



110008 and 110009 / HV Contacts



110822 / HV Backshell Strain Relief



100936 / Extraction Tool

See page 18 for **Specifications**

High Vacuum Connectors, Contacts and Tools

Components in this section are sold as the most basic components. Connectors do not include contacts and must be purchased separately. Connectors are made of high vacuum compatible stainless steel and DAP material. • Pins and sockets listed below are intended for use with high vacuum DAP connectors.

Connectors — 125°C / HV to 1x10⁻⁸ Torr

Number Contacts	Connector		Use With	Model Number	Part Number	Unit Price \$
	Gender	W x H x D				

Connectors — SS / DAP Polymer

9	M	1.22 x 0.50 x 0.61	110008, 110036	9D-HVCP	110000	44
9	F	1.22 x 0.50 x 0.61	110009, 110035	9D-HVCS	110001	64
15	M	1.55 x 0.50 x 0.61	110008, 110036	15D-HVCP	110002	48
15	F	1.55 x 0.50 x 0.61	110009, 110035	15D-HVCS	110003	68
25	M	2.10 x 0.50 x 0.61	110008, 110036	25D-HVCP	110004	60
25	F	2.10 x 0.50 x 0.61	110009, 110035	25D-HVCS	110005	70
50	M	2.65 x 0.60 x 0.61	110008, 110036	50D-HVCP	110006	85
50	F	2.65 x 0.60 x 0.61	110009, 110035	50D-HVCS	110007	100

Contacts, Type T2¹ — 125°C / HV to 1x10⁻⁸ Torr

Number Contacts	Contact		Wire		Model Number	Part Number	Unit Price \$
	Gender	Dia.	Dia.	Gauge			

Standard Duty Cycle — 10 per Pack

1 Pack	M	0.04	.048-.050 / 20-24 AWG	HVGP-10	110008	28
1 Pack	M	0.04	.023-.027 / 26-30 AWG	HVGP2-10	110036	28
1 Pack	F	0.04	.043-.046 / 20-24 AWG	HVGS-10	110009	28
1 Pack	F	0.04	.023-.027 / 26-30 AWG	HVGS2-10	110035	28

1. See page 110 for bulk packs

High Vacuum Backshell Strain Relief

Backshell Strain Reliefs are constructed of nickel-plated zinc and are sold as add-on components to the high vacuum connectors listed above. Not recommended for flat ribbon cable use.

Backshell Strain Relief — 110°C / HV to 1x10⁻⁸ Torr

Number Contacts	W x H x D		Use With	Model Number	Part Number	Unit Price \$
	With Connector Attached					

Backshell Strain Relief

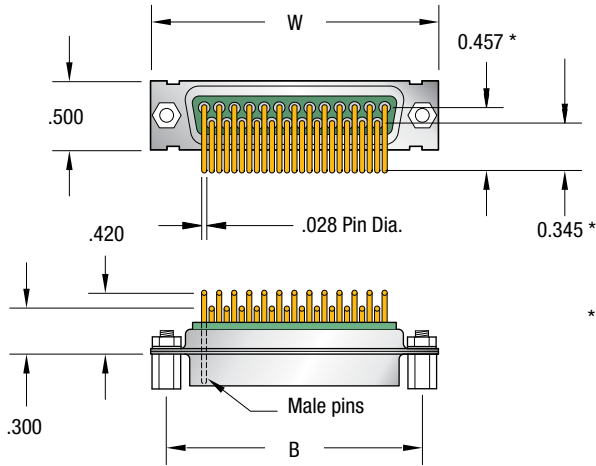
9	1.23 x 0.64 x 2.24		110000, 110001	HV9D-BS	110820	30
15	1.60 x 0.64 x 2.05		110002, 110003	HV15D-BS	110821	35
25	2.10 x 0.64 x 2.05		110004, 110005	HV25D-BS	110822	40
50	2.65 x 0.90 x 2.05		110006, 110007	HV50D-BS	110823	46

Tools — for Wiring HV Ribbon Connectors

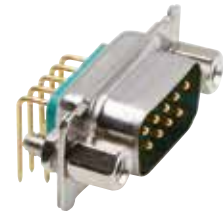
Contents	Description	Model Number	Part Number	Unit Price \$
1 Unit	Crimping tool for Type-T2 Contacts	DCT-2	100193	454
1 Unit	Wire Stripper, 26-36 AWG, .12-.40mm	2636AWG-STR	100191	95
1 Unit	Wire Stripper, 20-30 AWG, .25-.80mm	2030AWG-STR	100192	95
1 Unit	Extraction tool for Type-T2 Contacts	HV-ET	100936	28

High Vacuum PCB Connectors

HV PCB Connectors are made of DAP and are designed to be soldered directly to Printed Circuit Boards.



* Solder pins are the same length for all connectors.



111100 / Male, 9-pin HV PCB Connector



111101 / Male, 15-pin HV PCB Connector



111102 / Male, 25-pin HV PCB Connector

PCB Connectors — 125°C / HV to 1x10⁻⁸ Torr

Number Contacts	Connector		Model Number	Part Number	Unit Price \$
	Gender	W x H x D			

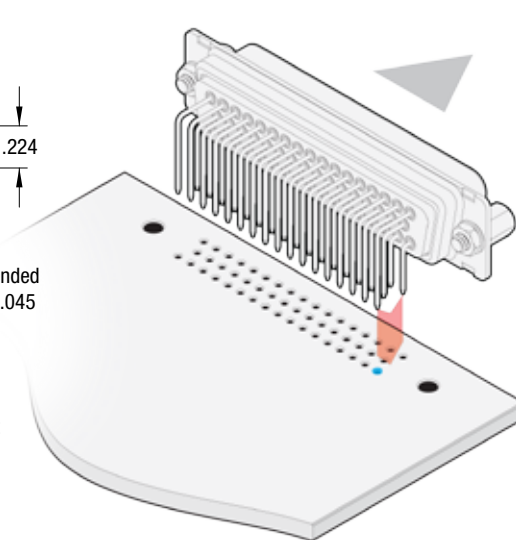
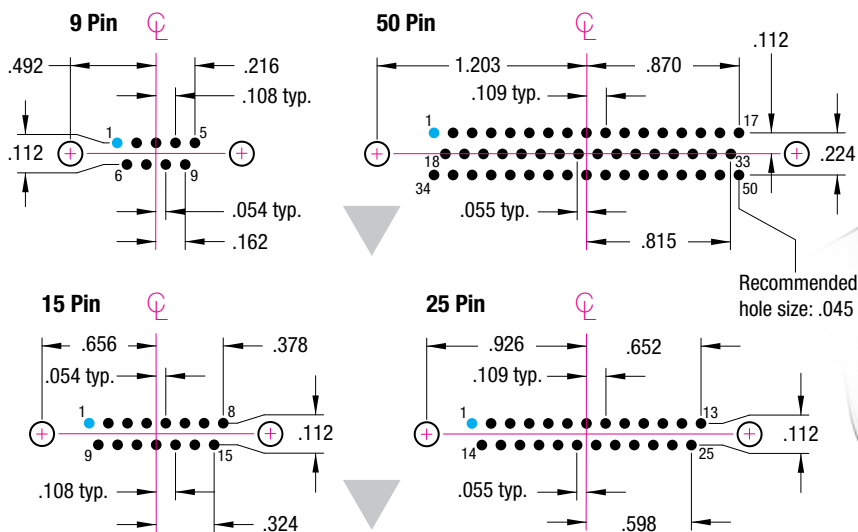
PCB Connectors — Male

9	M	1.22 x 0.50 x 0.68	0.984	9D-HVPCBP	111100	95
15	M	1.55 x 0.50 x 0.68	1.312	15D-HVPCBP	111101	105
25	M	2.09 x 0.50 x 0.68	1.852	25D-HVPCBP	111102	140
50	M	2.64 x 0.60 x 0.78	2.406	50D-HVPCBP	112657	210

90° Printed Circuit Board Contact Hole Pattern

Hole identification shown for male connectors above.

Mount connector with mating face positioned to follow direction of arrows.



50-Pin Connector Depicted

Instrumentation



101040 / Male Pin-Female Socket
Air-Connector to Connector



104100 / Air Service 25-Contact F/F Gender Adapter
(Contacts Included)



112796 / Air Service 15-Contact M/M Gender Adapter
(Contacts Included)



103120 / Air Service 25-Contact Connector
(Contacts Included)

Air-service Subminiature-D Cable Assemblies

Connector to Connector cable assemblies are 10-feet long and terminated with industry standard molded male/female Subminiature-D connectors. They have straight through, pin-to-pin wiring. Please contact factory for special cable assembly configurations.

Cable Assemblies — 80°C / Air Atmosphere

Number Contacts	Cable Length	Connector Type	Model Number	Part Number	Unit Price \$
-----------------	--------------	----------------	--------------	-------------	---------------

Connector to Connector

9	10-Foot	Male to Female	AIR-9D-10MF	101040	35
15	10-Foot	Male to Female	AIR-15D-10MF	101050	45
25	10-Foot	Male to Female	AIR-25D-10MF	101060	55
50	10-Foot	Male to Female	AIR-50D-10MF	101070	105

Air-Service Gender Adapters

Gender Adapters are offered for use with Accu-Glass Subminiature-D feedthroughs with male pins on both sides. They correct pin numbering to standard Subminiature-D configuration. (Pin 1 reverses position from vacuum to air side due to male to male construction.)

Tip: Male-male adapters can be used in place of a feedthrough in bench-test setups.

Gender Adapters — 80°C / Air Atmosphere

Contacts	Adapter		Model Number	Part Number	Unit Price \$
	Gender	W x H x D			

Gender Adapters — Delrin® Polymer

9	F / F	1.30 x 0.40 x 1.20	9D-AIR-GA-F	103101	115
15	F / F	1.60 x 0.40 x 1.20	15D-AIR-GA-F	103111	137
25	F / F	2.10 x 0.40 x 1.20	25D-AIR-GA-F	104100	150
50	F / F	2.60 x 0.50 x 1.20	50D-AIR-GA-F	103131	265
9	M / M	1.75 x 0.48 x 1.09	9D-AIR-GA-M	112795	130
15	M / M	2.10 x 0.48 x 1.09	15D-AIR-GA-M	112796	150
25	M / M	2.58 x 0.48 x 1.09	25D-AIR-GA-M	112797	160
50	M / M	3.15 x 0.50 x 1.09	50D-AIR-GA-M	112798	265

Air-service Connectors

Connectors accept up to 20 AWG wires. Contacts are gold-plated and the shell has a tin finish. Plastic Subminiature-D hoods are a one-piece, unshielded design with long knurled thumb screws, a side snaplock and a metal screw down strain relief. Connectors are a solder-cup with hood design.

Connectors — 80°C / Air Atmosphere

Number Contacts	Connector		Model Number	Part Number	Unit Price \$
	Gender	W x H x D			

Connectors

9	F	1.45 x 0.60 x 1.95	9D-AIR	103100	10
15	F	1.75 x 0.60 x 1.95	15D-AIR	103110	12
25	F	2.30 x 0.60 x 1.95	25D-AIR	103120	15
50	F	2.85 x 0.70 x 1.95	50D-AIR	103130	25

See page 18 for **Specifications**

Air-Side Dust Covers

Dust Covers ensure that your Subminiature-D connecting units maintain longevity. Keeping your connectors clean results in an efficient overall experience. These dust covers fit on air side connectors, they do **not** fit on any feedthroughs.

Dust Covers — PVC / Black Plastic

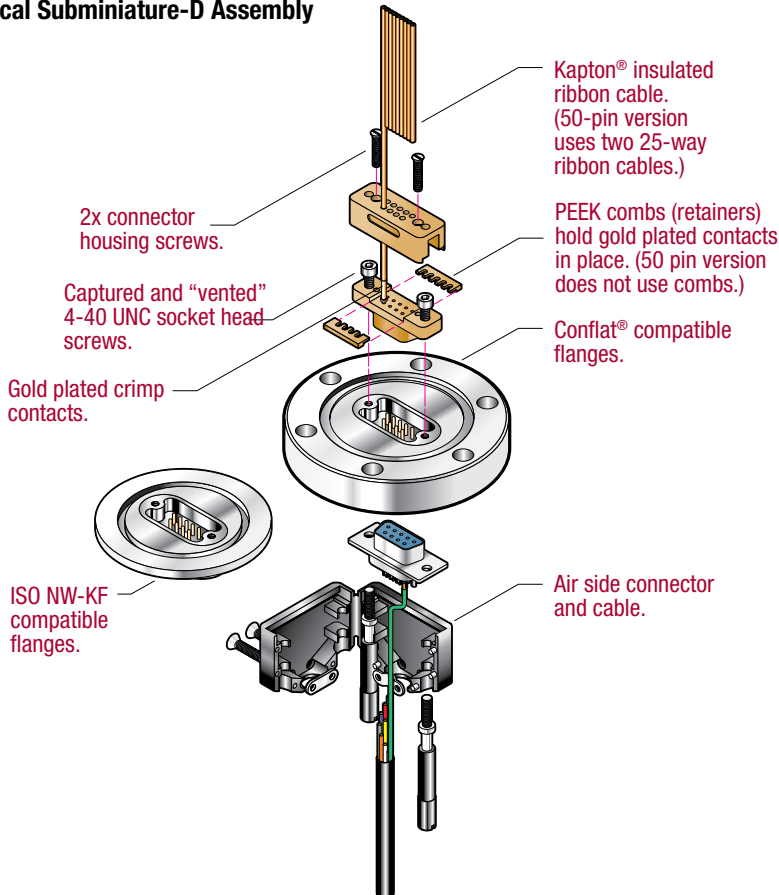
Fits / Use With	Gender	Pkg Qty	Description	Part Number	Unit Price \$
Female — Dust Covers					
9	F	1	Use only with Air Side Connectors	211078	2
15	F	1	Use only with Air Side Connectors	211080	2
25	F	1	Use only with Air Side Connectors	211082	3
50	F	1	Use only with Air Side Connectors	211084	4
Male — Dust Covers					
9	M	1	Use only with Air Side Connectors	211079	2
15	M	1	Use only with Air Side Connectors	211081	2
25	M	1	Use only with Air Side Connectors	211083	3
50	M	1	Use only with Air Side Connectors	211085	4



211078 / Female 9D Connector Dust Cover

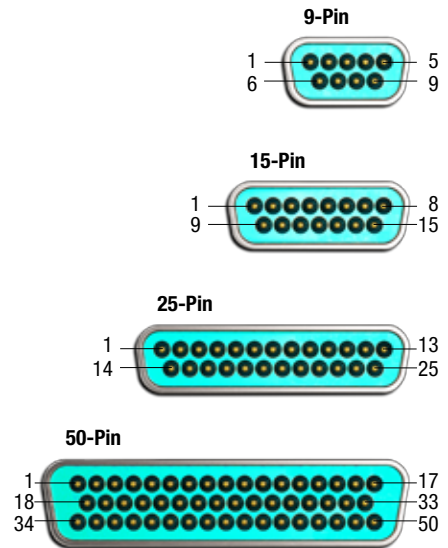
Instrumentation

Typical Subminiature-D Assembly



Connector Pin Assignments

Note: Accu-Glass Products, Inc., can fabricate custom cable assemblies with client-specified pinouts.



Front view of Male or rear view of Female