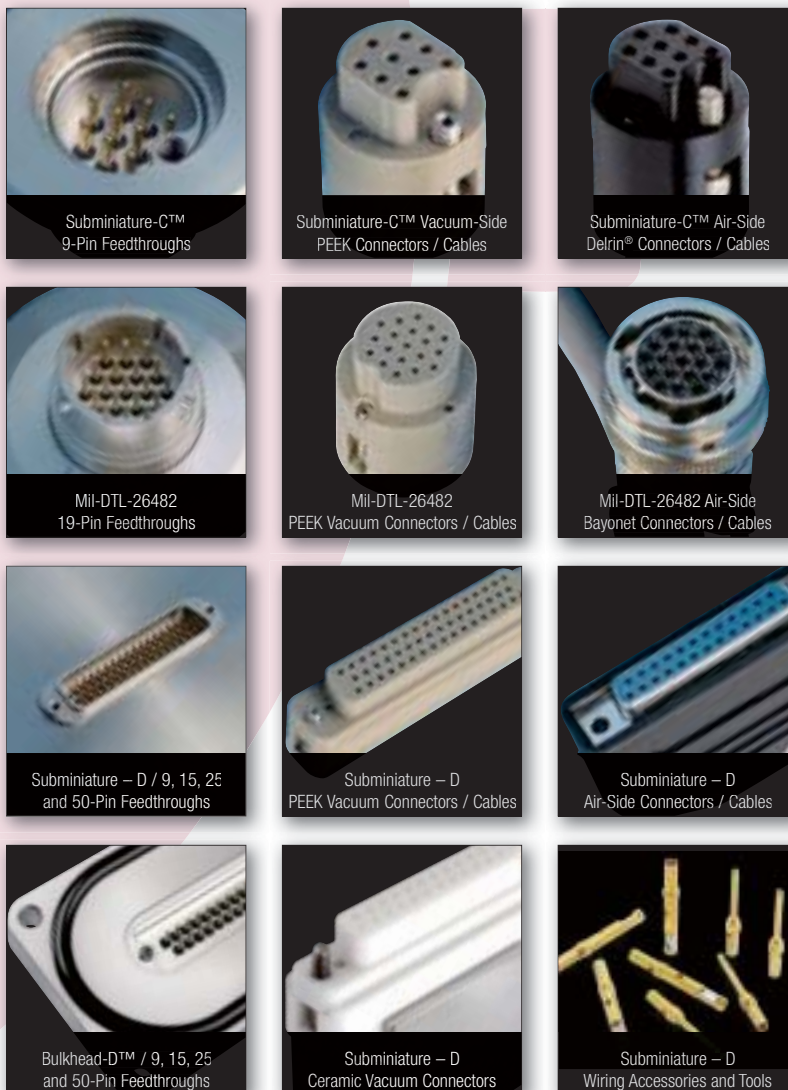


Section Contents



Subminiature-C™	8
Feedthroughs	9
UHV Cable and Components	10-12
Air-service Cables and Components	13
Mil-DTL-26482 Circular	14
Feedthroughs	15
UHV Cables and Components	16
Air-service Cables and Components	17
Subminiature-D	18
CF Feedthroughs and Hardware	19
ISO Feedthroughs and Hardware	20
Bulkhead-D™ Feedthroughs	21
UHV Cables and Components	22-25
HV Cables and Components	26-29
Air-Service Cables and Components	30
Technical Information	31

Product Highlights

Electrical Instrumentation Feedthroughs — Hermetic glass-to-metal seal feedthroughs are designed to meet Accu-Glass Products standard Subminiature-C™, Mil-DTL-26482 Circular and industry standard Subminiature-D configurations.

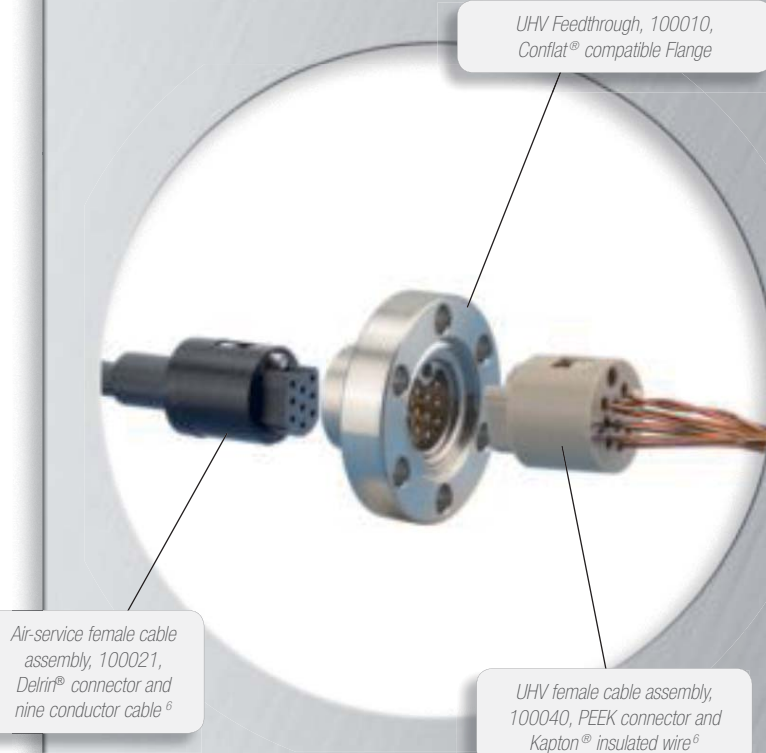
In-Vacuum Cable Assemblies — UHV and high temperature cable assemblies using compatible materials such as PEEK, Kapton® insulated wire, stainless steel and DAP are just some of the vacuum compatible materials used to provide complete in-vacuum wiring.

Air-service Cable Assemblies — Industry standard cables and connectors are utilized to provide the end user with complete connectivity solutions from bench equipment to the feedthrough flange.



Subminiature-C™

Accu-Glass 9-Pin Feedthrough



Subminiature-C™ Interface

Accu-Glass Products Subminiature-C™ multipin hermetic feedthroughs are designed for applications where space is limited or where Subminiature-D connections will not fit. This compact and unique 9-pin design allows installation into 1.33 inch CF metal seal and ISO NW16 KF elastomer seal flanges. Nine gold-plated pins are arranged in a straight through pin-to-pin design and are hermetically sealed and electrically insulated in a stainless steel shell using the latest in glass-ceramic bonding technology.

Subminiature-C™ feedthroughs and cables are sold individually or as kits, where each kit contains a feedthrough and both vacuum and air side cable assemblies.

Air and vacuum side connectors are fitted with captured stainless steel socket head screws that provide a means of securely locking them to their mating feedthroughs. On the vacuum side, Kapton® insulated cable assemblies fitted with PEEK connectors are available to meet the rigorous demands of ultrahigh vacuum environments. In-vacuum connector screws are vented where required and the feedthrough's screw-boss functions as a connection polarizing key. Air to vacuum pin position is identified with a permanent surface mark, which clearly locates pin assignments.

Features

- Subminiature-C™ 9-Pin Interface
- High temperature rated to 250°C
- UHV compatible construction
- Conflat® and ISO NW compatible mounts
- Kapton® Insulated Vacuum Cables
- PEEK or Macor® Connectors with Locking Screws
- Air Service Cables / Connectors
- Custom Solutions on Request

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	Delrin®
Connector, Vacuum ³	PEEK
Connector, Vacuum, High Temperature	Macor® Ceramic

Vacuum Range⁴

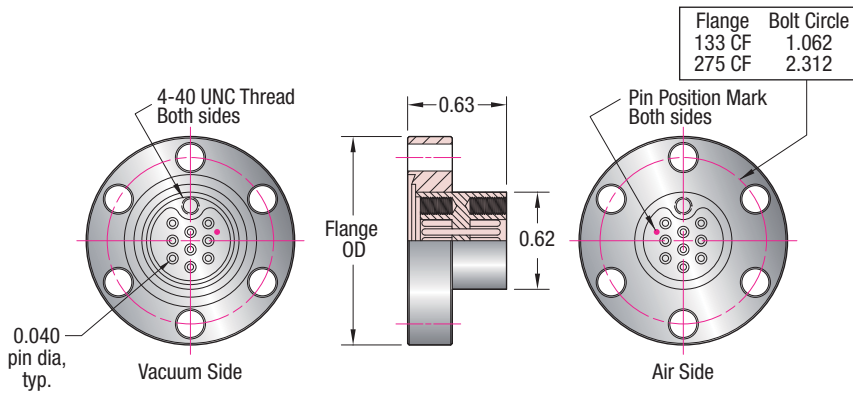
UHV, Ultrahigh vacuum	1x10 ⁻¹⁰ Torr
HV, High vacuum	1x10 ⁻⁸ Torr

Temperature Range⁵

Feedthrough	-200 to 250°C
Flange Mount, Conflat®	-200 to 450°C
Flange Mount, ISO	-26 to 150°C
Connector / Cable, Air	80°C
Connector / Cable, Vacuum	250°C
Connector, Ceramic	400°C
Thermal Gradient	25°C / Minute Maximum

Notes

1. Electrical ratings are maximum test values, with feedthrough's 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.
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.



- Pin position mark reverses position from vacuum side to air side.

CF Flange — 9-Pin Circular / 500 VDC, 5 Amp / 250°C / UHV to 1×10^{-10} Torr

Number Contacts	Flange Type	OD	Kit Cable Lengths	Model Number	Part Number
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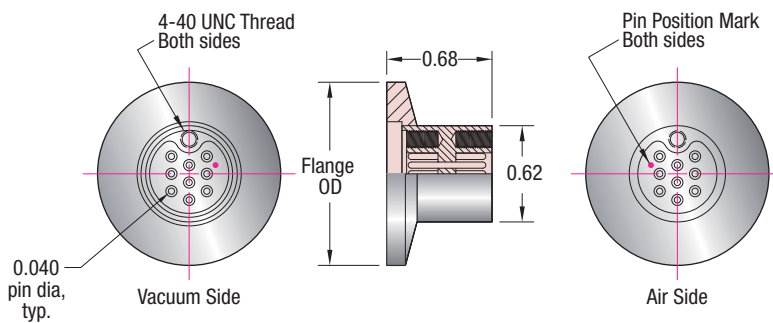
Kit — Feedthrough with Female Cable Assemblies

9	133 CF	1.33	96 Inch Air / 19 Inch Vacuum	9C-KIT-133	100000
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Feedthrough — Feedthrough without Cables

9	133 CF	1.33	—	9C-133	100010
9	275 CF	2.73	—	9C-275	100013
18	275 CF	2.73	Two 9-Pins on 0.750 Centers	9C2-275	100012

Compatible with Conflat® flanges and hardware



- Pin position mark reverses position from vacuum side to air side.

ISO KF Flange — 9-Pin Circular / 500 VDC, 5 Amp / 150°C / HV to 1×10^{-8} Torr

Number Contacts	Flange Type	OD	Kit Cable Lengths	Model Number	Part Number
--------------------	----------------	----	-------------------	-----------------	----------------

Kit — Feedthrough with Female Cable Assemblies

9	NW16 KF	1.18	96 Inch Air / 19 Inch Vacuum	9C-KIT-K16	100001
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Feedthrough — Feedthrough without Cables

9	NW16 KF	1.18	—	9C-K16	100011
9	NW25 KF	1.57	—	9C-K25	100016
9	NW40 KF	2.16	—	9C-K40	100015
18	NW40 KF	2.16	Two 9-Pins on 0.710 Centers	9C2-K40	100014

Compatible with ISO 2861/1 specification flanges and hardware



100000 / UHV CF 9-Pin
Complete Kit



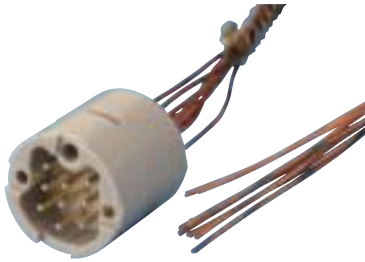
100012 / UHV CF 2 x 9-Pin Feedthrough
(Vacuum Side)



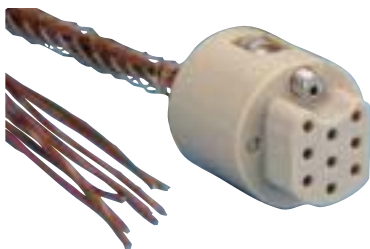
100001 / HV ISO-KF 9-Pin
Complete Kit



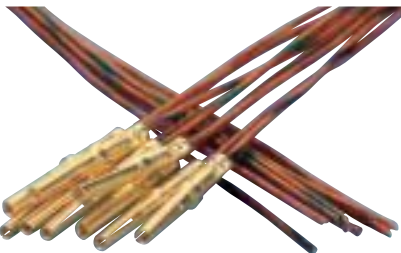
100011 / HV ISO-KF 9-Pin Feedthrough
(Vacuum Side)



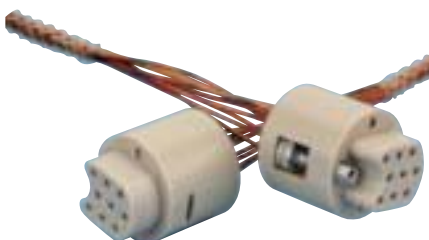
100030 / Male Pin UHV
Connector to Cable



100040 / Female Socket UHV
Connector to Cable



100060 / Female Socket UHV
Contact to Cable



100120 / Female Socket UHV
Connector to Connector Extension Cable

Ultrahigh Vacuum Round Cable Assemblies

Connector to Cable UHV round cable assemblies are fitted with PEEK Subminiature-C™ female or male connectors at one end and nine, non-terminated, Kapton® insulated wires at the other. The female cable connectors mate directly onto the vacuum-side of nine-pin Subminiature-C™ feedthroughs shown on page 9, or with the male in-vacuum cable connectors. The cable jacket is a PEEK braid with a nominal diameter of 0.14 inches. The nine wires are Kapton® insulated 28 AWG silver plated copper conductors, stranded 7 x 0.005.

Contact to Cable UHV round cable assemblies include male or female contacts on one end and nine, non-terminated, Kapton® insulated cable at the other.

Connector to Connector Extension Cables are fitted with PEEK Subminiature-C™ female connectors on both ends of a 19-inch UHV round cable.

Round Cable Assemblies — 9-Pin Circular / 250°C / UHV to 1x10⁻¹⁰ Torr

Number Contacts	Wire		Connector			Model Number	Part Number
	Length	Dia.	Gender	OD	Length		
Connector to Cable							
9	19	7x 0.005	M	0.60	0.65	CKAP-C9-19PC	100030
9	39	7x 0.005	M	0.60	0.65	CKAP-C9-39PC	100031
9	19	7x 0.005	F	0.60	0.75	CKAP-C9-19SC	100040
9	39	7x 0.005	F	0.60	0.75	CKAP-C9-39SC	100041
Contact to Cable ¹							
9	19	7x 0.005	M	—	—	CKAP-C9-19P	100050
9	39	7x 0.005	M	—	—	CKAP-C9-39P	100051
9	19	7x 0.005	F	—	—	CKAP-C9-19S	100060
9	39	7x 0.005	F	—	—	CKAP-C9-39S	100061
Connector to Connector Extension							
9	19	7x 0.005	F / F	0.60	0.75	CKAP-C9-192SC	100120

¹. They do not include PEEK connectors and will not allow subsequent connector installation. Wires must be threaded through the connector back-piece before crimping contacts

See page 8 for **Specifications**

Ultrahigh Vacuum Ribbon Cable Assemblies

Connector to Cable UHV ribbon cable assemblies are fitted with PEEK Subminiature-C™ female or male connectors at one end and nine, non-terminated, Kapton® insulated ribbon cable at the other. The female cable connectors mate directly onto the vacuum-side of nine-pin Subminiature-C™ feedthroughs shown on page 9, or with the male in-vacuum cable connectors. The ribbon cable jacket is a PEEK weave with a 0.04 x 0.40 inch nominal cross-section. The nine wires are 28 AWG silver plated copper conductors, stranded 7 x 0.005.

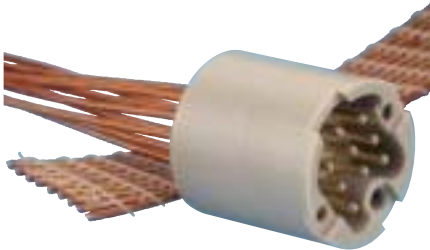
Contact to Cable UHV ribbon cable assemblies include male or female contacts on one end and nine, non-terminated, Kapton® insulated ribbon cable at the other.

Connector to Connector Extension cables are fitted with PEEK Subminiature-C™ female connectors on both ends of a 19-inch UHV ribbon cable.

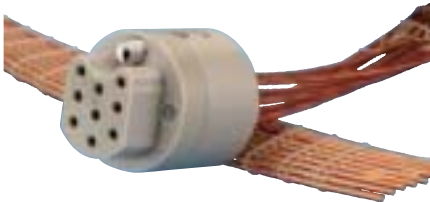
Ribbon Cable Assemblies — 9-Pin Circular / 250°C / UHV to 1x10⁻¹⁰ Torr

Number Contacts	Wire		Connector			Model Number	Part Number
	Length	Dia.	Gender	OD	Length		
Connector to Cable							
9	19	7x 0.005	M	0.60	0.65	CKAP-R9-19PC	100100
9	39	7x 0.005	M	0.60	0.65	CKAP-R9-39PC	100101
9	19	7x 0.005	F	0.60	0.75	CKAP-R9-19SC	100110
9	39	7x 0.005	F	0.60	0.75	CKAP-R9-39SC	100111
Contact to Cable ¹							
9	19	7x 0.005	M	—	—	KAP-R9-19P	100240
9	39	7x 0.005	M	—	—	KAP-R9-39P	100241
9	19	7x 0.005	F	—	—	KAP-R9-19S	100250
9	39	7x 0.005	F	—	—	KAP-R9-39S	100251
Connector to Connector Extension							
9	19	7x 0.005	F / F	0.60	0.75	CKAP-R9-192SC	100130

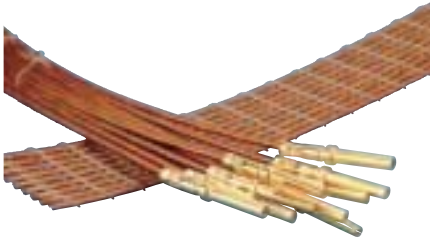
1. They do not include PEEK connectors and will not allow subsequent connector installation. Wires must be threaded through the connector back-piece before crimping contacts



100100 / Male Pin UHV
Connector to Cable



100110 / Female Socket UHV
Connector to Cable



100250 / Female Socket UHV
Contact to Cable



Ultrahigh Vacuum Connectors and Contacts

PEEK and Macor® ceramic connectors do not include contacts and must be purchased separately. High-use stainless steel Type-T1 contacts are recommended for use in connectors where plug-in cycles will exceed 3 cycles per day.

Macor® ceramic connectors are designed for high temperature and extreme environments not suitable for our standard PEEK connectors. Note that wires must be threaded through connector back-piece before crimping contacts.

Connectors¹ — 9-Pin Circular / UHV to 1x10⁻¹⁰ Torr

Number Contacts	Connector			Use Type-T1 Contacts	Model Number	Part Number
	Gender	Dia.	Length			

PEEK — Polymer Shell / 250°C

9	M	0.61	0.64	Male	9C-PKP	100140
9	F	0.61	0.74	Female	9C-PKS	100150

Macor® — Ceramic Shell / 400°C

9	M	0.61	0.64	Male	9C-MCP	112701
9	F	0.61	0.74	Female	9C-MCS	112700

1. Note temperature rating differences

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

Number Contacts	Contact		Wire		Model Number	Part Number
	Gender	Dia.	Dia. / Gauge			

Contacts, Type-T1 — Standard / 10 per Pack

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

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

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

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. See Tools on page 13



100150 / Female PEEK Connector
(Contacts sold separately)



100140 / Male PEEK Connector
(Contacts sold separately)



112700 / Female Ceramic Connector
(Contacts sold separately)



112701 / Male Ceramic Connector
(Contacts sold separately)



100180 / Female Contacts
110908 / High Duty Cycle Contacts



Air-service Cable Assemblies / Cable

Connector to Cable air-service cable assemblies are fitted with a Delrin® Subminiature-C™ female connector at one end and non-terminated nine wires PVC insulated on the other. The female cable connectors mate directly onto the air side of nine-pin Subminiature-C feedthroughs shown on page 9. The cable jacket is gray PVC with a nominal diameter of 0.23 inches. The nine wires are 24 AWG tinned-copper conductors, stranded 7 x 0.008. Shielding is aluminum / Mylar® foil with a 24 AWG tinned-copper drain wire.

Cable Assemblies — 9-Pin Circular / 80°C / Air Atmosphere

Number Contacts	Wire		Connector			Model Number	Part Number
	Length	Dia.	Gender	OD	Length		

Connector to Cable — 9-Pin Circular Connector (one end only)

9	48	7x 0.008	F	0.60	0.87	AIR-CP9-48SC	100020
9	96	7x 0.008	F	0.60	0.87	AIR-CP9-96SC	100021

Cable — Non Terminated 9 Conductor Cable

9	15-ft	7x 0.008	No Connector			AIR-CP9-15	100022
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Air-service Connectors / Tools

Delrin® shell connectors do not include contacts and must be purchased separately. High duty cycle stainless steel Type-T1 contacts are recommended for use in connectors where plug-in cycles will exceed 3 cycles per day.

Connectors¹ — 9-Pin Circular / 80°C / Air Atmosphere

Number Contacts	Connector			Use Type T-1 Contacts	Model Number	Part Number
	Gender	Dia.	Length			

Delrin® — Polymer Shell

9	M	0.61	0.64	Male	9C-DP	100162
9	F	0.61	0.74	Female	9C-DS	100160
Strain Relief ²		0.61	0.64	—	9C-DSR	100161

1. See page 12 for Type-T1 electrical contacts. 2. Includes two screws and shrink tubing

Tools — for Wiring 9-Pin Circular Vacuum and Air-Service Connectors

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

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



100020 / Female Air Connector to Cable
100022 / Non-terminated Air-Service Cable



100160 / Female Air-Service Connector
100162 / Male Air-Service Connector
(Contacts sold separately)



100161 / Air-service Connector Strain Relief
(Connector sold separately)



⚙️ Set Dial to #5
100190 / Contact Crimp Tool



100191 / Wire Stripper



Mil-DTL-26482

Accu-Glass 19-Pin Feedthrough

UHV Feedthrough, 110210
Conflat® compatible flange

Air-service cable⁶ assembly,
110232, nickel-plated
female aluminum connector
and PVC insulated cable.

UHV female cable⁶ assembly,
110230, PEEK connector and
Kapton® insulated wire

Mil-DTL-26482 Interface

Accu-Glass Products 19-Pin circular instrumentation feedthroughs are constructed with pin arrangement per Mil-DTL-26482 specification. Nineteen gold-plated pins are 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.

Mil-DTL-26482 feedthroughs and cable assemblies are sold individually or as complete kits, where each kit contains a feedthrough and both vacuum and air side cable assemblies.

Vacuum compatible cable assemblies are fitted with PEEK polymer connectors and Kapton® insulated ribbon cable to meet the demands of ultrahigh vacuum environments. Vacuum connector includes a captured stainless steel socket head screw that securely locks it to a mating feedthrough. Captured in-vacuum screws are vented where required and the feedthrough's screw-boss doubles as a polarizing key. Feedthrough's air-to-vacuum pin position is identified with a permanent surface mark to aid pin assignment.

Air-service cable assemblies have standard bayonet type Mil-DTL-26482 connectors. Custom in-vacuum and air-service cable assemblies are available on request.

See pages 34-37 for Mil-DTL-5015 circular 3-pin and 6-pin feedthroughs.

Features

- Mil-DTL-26482 19-Pin Interface
- High temperature rated to 250°C
- Conflat® and ISO NW compatible mounts
- Kapton® insulated vacuum cables
- PEEK connector with locking screws
- Air Service Cables / Connectors
- UHV compatible construction
- Custom solutions on request

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	Ni plated Al
Connector, Vacuum ³	PEEK

Vacuum Range⁴

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

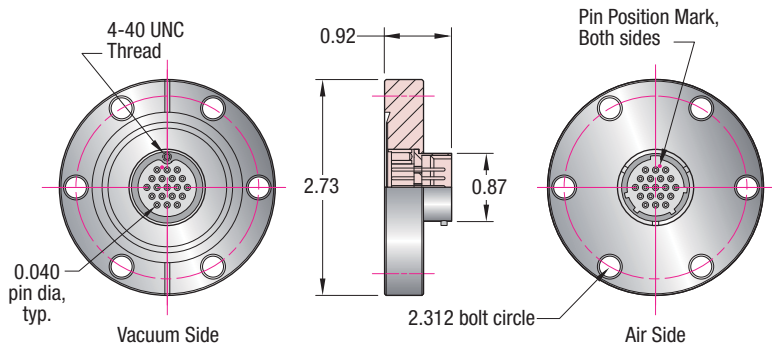
Temperature Range⁵

Feedthrough	-200 to 250°C
Flange Mount, Conflat®	-200 to 450°C
Flange Mount, ISO	-26 to 150°C
Connector / Cable, Air	80°C
Connector / Cable, Vacuum	250°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.
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.

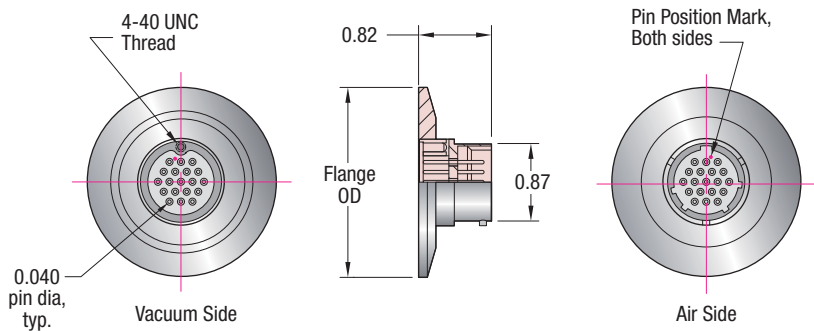


• Pin position mark reverses position from vacuum side to air side.

CF Flange — 19-Pin Circular / 500 VDC, 5 Amp / 250°C / UHV to 1×10^{-10} Torr

Number Contacts	Flange Type	OD	Kit Cable Lengths	Model Number	Part Number
Kit — Feedthrough with Female Cable Assemblies					
19	275 CF	2.73	96 Inch Air / 19 Inch Vacuum	19C-KIT-275	110810
Feedthrough — Feedthrough without Cables					
19	275 CF	2.73	—	19C-275	110210

Compatible with Conflat® flanges and hardware



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

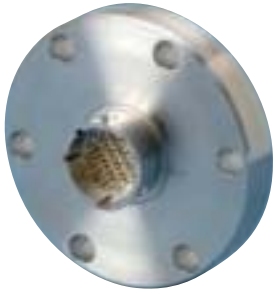
ISO KF Flange — 19-Pin Circular / 500 VDC, 5 Amp / 150°C / HV to 1×10^{-8} Torr

Number Contacts	Flange Type	OD	Kit Cable Lengths	Model Number	Part Number
Kit — Feedthrough with Female Cable Assemblies					
19	NW40 KF	2.16	96 Inch Air / 19 Inch Vacuum	19C-KIT-K40	110811
Feedthrough — Feedthrough without Cables					
19	NW40 KF	2.16	—	19C-K40	110220
19	NW50 KF	2.95	—	19C-K50	113095

Compatible with ISO 2861/1 specification flanges and hardware



110810 / UHV CF 19-Pin Complete Kit



110210 / UHV CF 19-Pin Feedthrough (Air Side)



110811 / HV ISO-KF 19-Pin Complete Kit



110220 / HV ISO-KF 19-Pin Feedthrough (Air Side)



110230 / UHV Female Connector Cable Assembly



110812 / UHV Male Connector Cable Assembly



110240 / UHV Female Connector (Contacts Sold Separately)



110250 / UHV Male Connector (Contacts Sold Separately)



110008 and 110009 / UHV Contacts

Ultrahigh Vacuum Ribbon Cable Assemblies

Connector to Cable UHV ribbon cable assemblies are terminated with male or female PEEK polymer connectors (Mil-DTL-26482 19-pin arrangement) on one end and bare Kapton® insulated ribbon cable at the other. PEEK female connectors mate to the vacuum side of Mil-DTL-26482 type feedthroughs, and can be locked in place with a single captured socket-head screw. Ribbon cable consists of 19 conductors held together with a PEEK monofilament outer weave. Individual leads are stranded 7 x 0.005 inch, 28 AWG silver plated copper conductors with Kapton® insulation.

Ribbon Cable Assemblies — 19-Pin Circular / 250°C / UHV to 1x10⁻¹⁰ Torr

Number Contacts	Cable		Connector			Model Number	Part Number
	Length	Width x Thk.	Gender	OD	Length		

Connector to Cable

19	19	0.93 x 0.05	M	0.98	0.77	KAP-R19-19PC	110812
19	39	0.93 x 0.05	M	0.98	0.77	KAP-R19-39PC	110813
19	19	0.93 x 0.05	F	0.98	1.12	KAP-R19-19SC	110230
19	39	0.93 x 0.05	F	0.98	1.12	KAP-R19-39SC	110231

Connectors, Contacts and Tools

Individual connection components such as connector shells, contacts and tools are available from the table below. Note that these connectors do not include contacts (available in two different wire gauge sizes) and must be purchased separately.

Connectors and Contacts — 19-Pin Circular / UHV to 1x10⁻¹⁰ Torr

Number Contacts	Connector / Contact / Wire			Model Number	Part Number
	Gender	Dia.	Length		

PEEK — Polymer Shell / 250°C

19	M	0.98	0.77	19C-PKP	110250
19	F	0.98	1.12	19C-PKS	110240

Contacts, Type-T2¹ — 10 per Pack Wire-well ID / Gauge

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

1. See Page 110 for bulk packs.

Tools — for Wiring 19-Pin Circular Vacuum Connectors

Contents	Description	Model Number	Part Number
1 Unit	Crimping tool for Type-T2 Contacts	DCT-2	100193
1 Unit	Wire Stripper, 26-36 AWG, .12-.40mm	2636AWG-STR	100191
1 Unit	Wire Stripper, 20-30 AWG, .25-.80mm	2030AWG-STR	100192
1 Set	Connector Screwdriver Set ¹	DRVR-SET	112146

1. Includes one each flat, phillips and hex drivers

See page 14 for **Specifications**



Air-service Round Cable Assemblies

Connector to Cable air-service round cable assemblies are terminated with an electroless-nickel plated aluminum shell, Mil-DTL-26482 19-pin female connector at one end, and 20 (color coded) PVC insulated leads at the other. Cables use stranded 24 AWG tinned-copper leads. One lead is not wired to Mil-DTL-26482 connector, but is available for grounding or any other purpose. Cable leads are shielded with an aluminum-polyester foil wrap and a 0.38 diameter gray PVC jacket, and rated to 300 volts.

Cable Assemblies — 19-Pin Circular / 80°C / Air Atmosphere

Number Contacts	Wires		Connector			Model Number	Part Number
	Length	Dia.	Gender	OD	Length		

Connector to Cable

19	48	0.35 max	F	1.18	2.05	AIR-CP19-48SC	110232
19	96	0.35 max	F	1.18	2.05	AIR-CP19-96SC	110233
19	180	0.35 max	Cable Only	—	—	AIR-CP19-15	112744

Air-service Connectors, Contacts and Tools

Mil-DTL-26482 connectors accept up to 20 AWG wire. Contacts are gold-plated and shell is made of electroless-nickel plated aluminum. Rear removable crimp contacts provide easy assembly. Connector shells, contacts and tools are available from tables below. Note that these connectors do not include contacts, which must be purchased separately.

Connectors and Contacts — 19-Pin Circular / 80°C / Air Atmosphere

Number Contacts	Connector / Contact / Wire			Strain Relief	Model Number	Part Number
	Gender	Dia.	Length			

Connectors *

19	F	1.18	2.05	Straight	19C-AIR	110234
19	F	1.18	2.46	90°	19C-AIR-90	112702

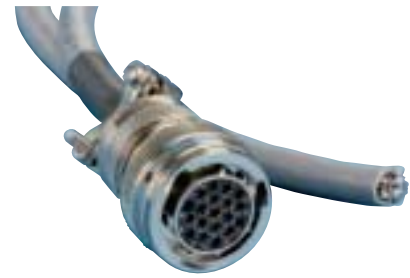
Contacts, Type-T5i — 10 per Pack Wire-well ID / Gauge

1 Pack	F	0.04	.048-.050 / 20-24 AWG	GS-M40-10	110235
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Tools — for Wiring 19-Pin Circular Air-Service Connectors

Contents	Description	Model Number	Part Number
1 Unit	Crimping tool for Type-T5 Contacts	DCT-5	110702
1 Unit	Extraction tool for Type-T5i Contacts	ET-M40	111612
1 Unit	Insertion Tool for Type-T5i Contacts	IT-M40	111611

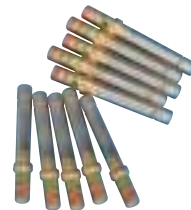
*** Tip:** Dip contacts into isopropyl alcohol just prior to inserting into connector for smooth contact insertion.



110232 / Air-Service Female
Cable Assembly



110234 / Air-Service Female Connector
(Contacts Sold Separately)



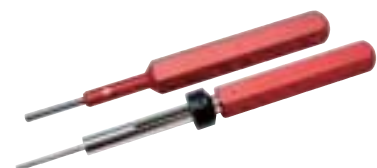
110235 / Air-Service Female Contacts

⚡ Set First Dial to #20 / Red



↖ Set Second Dial to #24

110702 / Contact Crimp Tool



111612 / Extraction Tool
111611 / Insertion Tool

See page 14 for **Specifications**



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

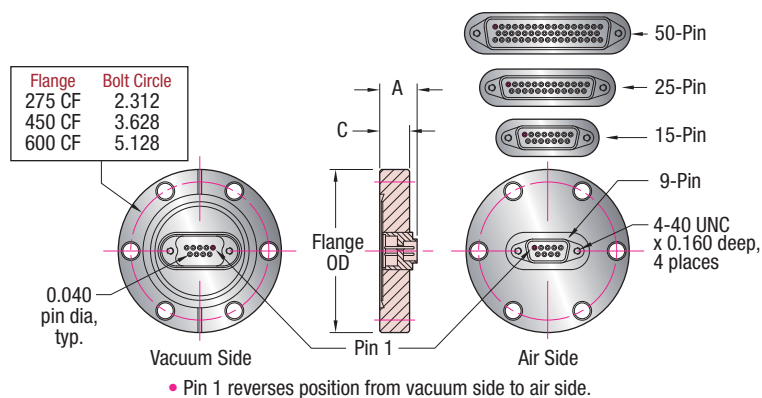
UHV, Ultrahigh vacuum	1x10 ⁻¹⁰ Torr
HV, High vacuum	1x10 ⁻⁸ Torr

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.



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
--------------------	----------------	----	---	---	-----------------	----------------

Feedthrough — Feedthrough without Cables

9	275 CF	2.73	0.63	0.50	9D-275	100200
15	338 CF	3.36	0.76	0.68	15D-338	100209
15	450 CF	4.47	0.76	0.68	15D-450	100210
18 ¹	450 CF	4.47	0.76	0.68	9D2-450	100213
25	450CF	4.47	0.76	0.68	25D-450	100220
30 ¹	450 CF	4.47	0.76	0.68	15D2-450	100212
40 ¹	450 CF	4.47	0.76	0.68	25D-15D-450	100226
50 ¹	450 CF	4.47	0.76	0.68	25D2-450	100225
15	462 CF	4.62	0.76	0.68	15D-462	100215
25	462 CF	4.62	0.76	0.81	25D-462	112665
25	600 CF	5.97	0.86	0.78	25D-600	100228
50	600 CF	5.97	0.86	0.78	50D-600	100230
50 ¹	600 CF	5.97	0.86	0.78	25D2-600	100227
100 ¹	600 CF	5.97	0.86	0.78	50D2-600	100234

1. Uses two feedthroughs

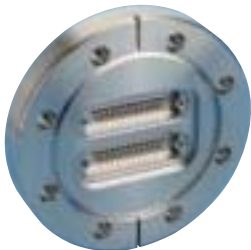
Mounting Hardware — Gaskets and Fasteners

Flange Type	Pkg Qty	Part Number	Pkg Qty	Part Number	Pkg Qty	Part Number
Hardware — Copper Gasket			Viton® Gasket		Fasteners ²	
275 CF	10	200760¹	5	200763	24	200764
338 CF	10	200780	1	200782	32	200783
450 CF	10	200810¹	1	200812	32	200813
462 CF	10	200830	1	200832	40	200833
600 CF	10	200850¹	1	200852	32	200853

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



100200 / 9-Pin (Air Side)



100225 / 2 x 25-Pin (Vacuum Side)



113290 / Gasket Installation Clips
See Page 231



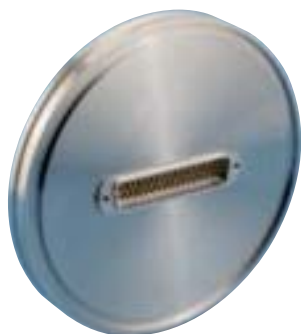
200760 / Copper Gasket



200763 / Viton® Gasket



100211 / 15-Pin (Vacuum Side)



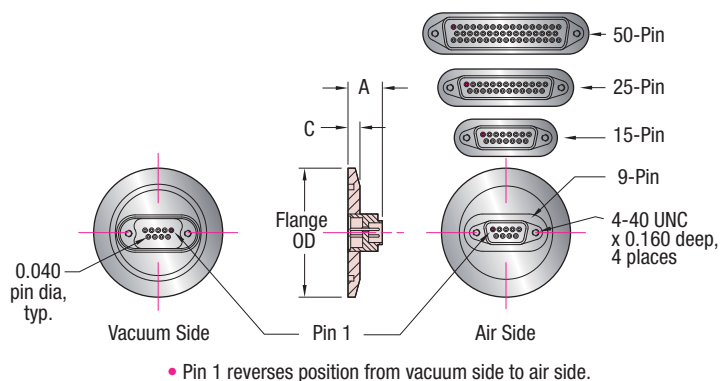
100231 / 50-Pin (Air Side)



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 1×10^{-8} Torr

Number Contacts	Flange Type	OD	A	C	Model Number	Part Number
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Feedthrough — Feedthrough without Cables

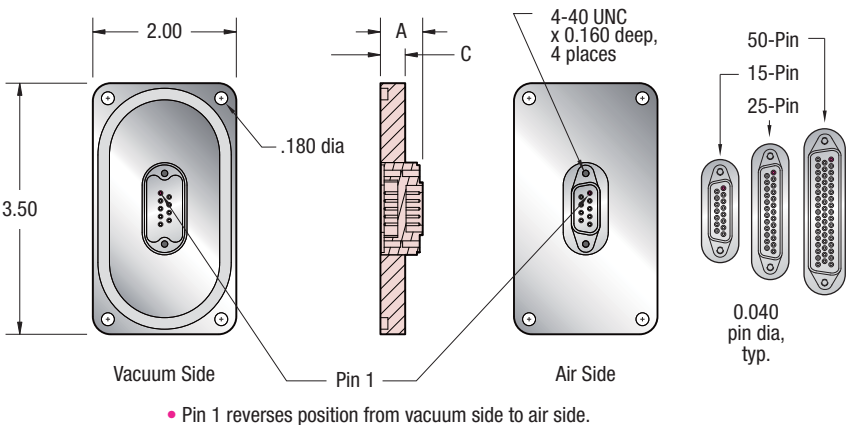
9	NW40 KF	2.16	0.59	0.20	9D-K40	100201
9	NW50 KF	2.95	0.59	0.20	9D-K50	100238
15	NW50 KF	2.95	0.59	0.20	15D-K50	100211
18 ¹	NW50 KF	2.95	0.59	0.20	9D2-K50	100239
24 ¹	NW50 KF	2.95	0.59	0.20	9D-15D-K50	100236
15	NW63 LF	3.74	0.59	0.47	15D-L63	100214
25	NW63 LF	3.74	0.59	0.47	25D-L63	100221
30 ¹	NW63 LF	3.74	0.59	0.47	15D2-L63	111007
50	NW100 LF	5.12	0.59	0.47	50D-L100	100231
50 ¹	NW100 LF	5.12	0.59	0.47	25D2-L100	100237
75 ¹	NW100 LF	5.12	0.59	0.47	25D3-L100	112708
100 ¹	NW100 LF	5.12	0.59	0.47	50D2-L100	100235

1. Uses two feedthroughs

Mounting Hardware — Centering Rings and Clamps¹

Flange Type	Pkg Qty	Part Number	Pkg Qty	Part Number
ISO KF — Centering Ring			Hinged Clamp	
NW40 KF	1	202220	1	202225
NW50 KF	1	202230	1	202235
ISO LF — Centering Ring			Claw Clamp	
NW63 LF	1	202240	1	210550
NW100 LF	1	202262	1	210550

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



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 1x10⁻⁸ Torr

Number Contacts	Flange Type	OD	A	C	D	Model Number	Part Number
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Feedthrough — Gasket and Fasteners Included¹

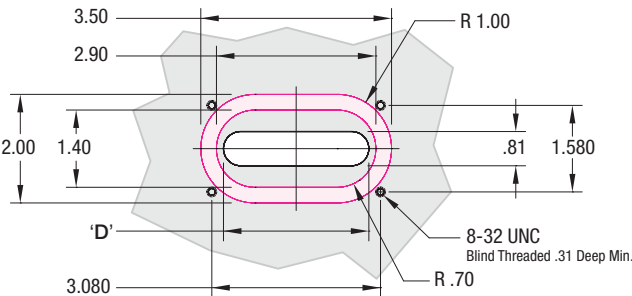
9	Rectangular	2 x 3.50	0.59	0.34	1.47	9D-RECT	113090
15	Rectangular	2 x 3.50	0.59	0.34	1.80	15D-RECT	113091
25	Rectangular	2 x 3.50	0.59	0.34	2.34	25D-RECT	113092
50	Rectangular	2 x 3.50	0.59	0.34	2.84	50D-RECT	113093

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
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Gasket — Viton O-Ring

Rectangular	1	Viton Elastomer Compound	113096
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Fasteners — Bolts and Washers

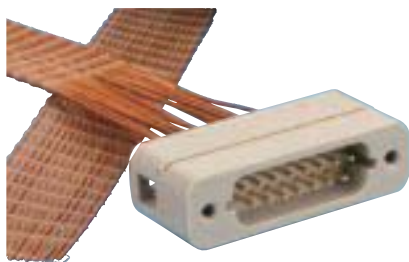
Rectangular	4	5/8" Long, 8-32 Socket Head Screw / Washers	113097
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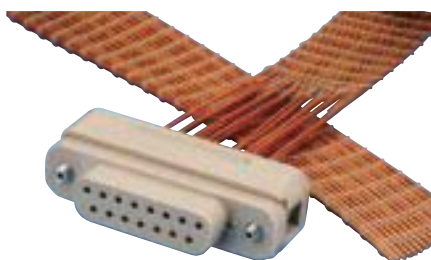
113096 / Viton O-Ring



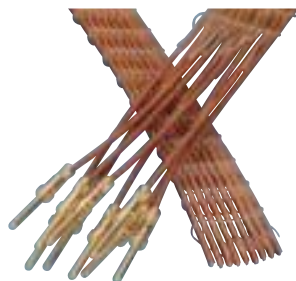
113097 / Bolts and Washers



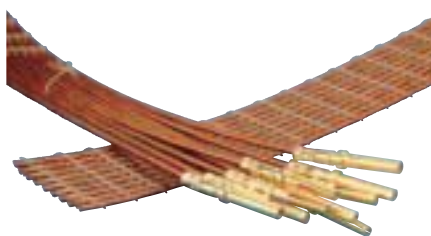
100340 / Male Pin UHV Connector to Cable



100350 / Female Socket UHV Connector to Cable



100240 / Male Pin UHV Contact to Cable



100250 / Female Socket UHV Contact to Cable

See page 18 for **Specifications**

See page 94 for **Cable Specs**

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

Contact to Cable

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

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
	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
9	39	0.04 x 0.40	F / F	1.30 x 0.50 x 0.75	KAP-R9-392SC	100881
9	19	0.04 x 0.40	F / M	1.30 x 0.50 x 0.75	KAP-R9-19SCPC	112494
9	39	0.04 x 0.40	F / M	1.30 x 0.50 x 0.75	KAP-R9-39SCPC	112495
15	19	0.04 x 0.74	F / F	1.70 x 0.50 x 0.75	KAP-R15-192SC	100890
15	39	0.04 x 0.74	F / F	1.70 x 0.50 x 0.75	KAP-R15-392SC	100891
15	19	0.04 x 0.74	F / M	1.70 x 0.50 x 0.75	KAP-R15-19SCPC	112496
15	39	0.04 x 0.74	F / M	1.70 x 0.50 x 0.75	KAP-R15-39SCPC	112497
25	19	0.04 x 1.20	F / F	2.20 x 0.50 x 0.75	KAP-R25-192SC	100900
25	39	0.04 x 1.20	F / F	2.20 x 0.50 x 0.75	KAP-R25-392SC	100901
25	19	0.04 x 1.20	F / M	2.20 x 0.50 x 0.75	KAP-R25-19SCPC	112498
25	39	0.04 x 1.20	F / M	2.20 x 0.50 x 0.75	KAP-R25-39SCPC	112499
50 ¹	19	0.08 x 1.20	F / F	2.70 x 0.50 x 0.75	KAP-R50-192SC	100480
50 ¹	39	0.08 x 1.20	F / F	2.70 x 0.50 x 0.75	KAP-R50-392SC	100481
50 ¹	19	0.08 x 1.20	F / M	2.70 x 0.50 x 0.75	KAP-R50-19SCPC	100482
50 ¹	39	0.08 x 1.20	F / M	2.70 x 0.50 x 0.75	KAP-R50-39SCPC	112500

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.)

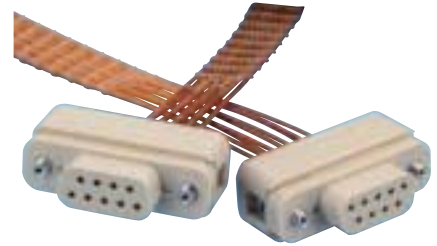
Ultrahigh vacuum gender adapters are made of UHV compatible PEEK material.

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

Number Contacts	W x H x D	Model Number	Part Number

Gender Adapters — PEEK Polymer Shell / Contacts included.

9	1.30 x 0.40 x 1.20	9D-PK-GA	103102
15	1.60 x 0.40 x 1.20	15D-PK-GA	103112
25	2.10 x 0.40 x 1.20	25D-PK-GA	104101
50	2.07 x 0.50 x 1.20	50D-PK-GA	103132



100880 / Female to Female UHV
Connector to Connector Extension Cable



112496 / Female to Male UHV
Connector to Connector Extension Cable



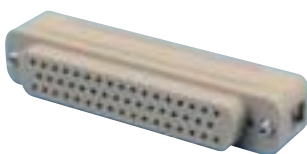
104101 / Subminiature-D UHV Gender Adapter
(Contacts Included)

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 1×10^{-10} Torr

Number Contacts	Connector		Use With	Model Number	Part Number
	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
9	F	1.30 x 0.50 x 0.75	Type T1 Contacts	9D-PKS	100440
15	M	1.60 x 0.50 x 0.75	Type T1 Contacts	15D-PKP	100410
15	F	1.60 x 0.50 x 0.75	Type T1 Contacts	15D-PKS	100450
25	M	2.10 x 0.50 x 0.75	Type T1 Contacts	25D-PKP	100420
25	F	2.10 x 0.50 x 0.75	Type T1 Contacts	25D-PKS	100460
50	M	2.70 x 0.50 x 0.75	Type T1 Contacts	50D-PKP	100430
50	F	2.70 x 0.50 x 0.75	Type T1 Contacts	50D-PKS	100470

Backshell Strain Relief — PEEK Polymer Shell / 250°C

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

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

Backshell Strain Relief — Stainless Steel / 400°C

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

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

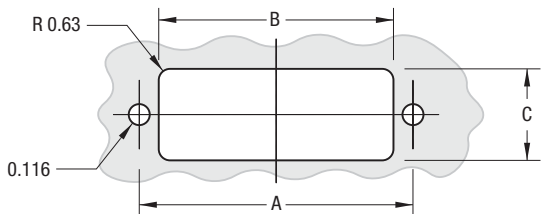
See page 18 for **Specifications**



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



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

Number Contacts	Connector		Panel Mount Dimensions			Model Number	Part Number
	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
15	M	2.10 x 0.48 x 0.75	1.807	1.625	0.505	15D-PKP-E	100423
25	M	2.60 x 0.48 x 0.75	2.330	2.105	0.505	25D-PKP-E	100421
50	M	3.20 x 0.50 x 0.75	2.906	2.680	0.530	50D-PKP-E	100431

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

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

Number Contacts	Contact		Wire	Model Number	Part Number
	Gender	Dia.	Dia. / Gauge		

Contacts, Type-T1 — Standard / 10 per Pack

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

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

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

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.

Tools — for Wiring UHV Ribbon Vacuum Connectors

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

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



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



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



100180 / Female Contacts
110908 / High Duty Cycle Contacts



Set Dial to #5 ➤

100190 / Contact Crimp Tool



112146 / Connector Screwdriver Set



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
	Length	Dimensions	Gender	W x H x D		

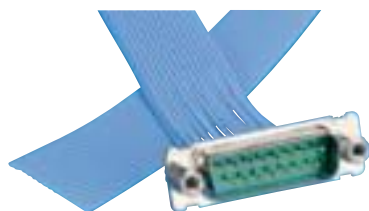
Connector to Cable

9	19	0.03 x 0.45	M	1.22 x 0.50 x 0.61	HVB-R9-19PC	110021
9	39	0.03 x 0.45	M	1.22 x 0.50 x 0.61	HVB-R9-39PC	110022
9	19	0.03 x 0.45	F	1.22 x 0.50 x 0.61	HVB-R9-19SC	110019
9	39	0.03 x 0.45	F	1.22 x 0.50 x 0.61	HVB-R9-39SC	110020
15	19	0.03 x 0.75	M	1.55 x 0.50 x 0.61	HVB-R15-19PC	110025
15	39	0.03 x 0.75	M	1.55 x 0.50 x 0.61	HVB-R15-39PC	110026
15	19	0.03 x 0.75	F	1.55 x 0.50 x 0.61	HVB-R15-19SC	110023
15	39	0.03 x 0.75	F	1.55 x 0.50 x 0.61	HVB-R15-39SC	110024
25	19	0.03 x 1.25	M	2.10 x 0.50 x 0.61	HVB-R25-19PC	110029
25	39	0.03 x 1.25	M	2.10 x 0.50 x 0.61	HVB-R25-39PC	110030
25	19	0.03 x 1.25	F	2.10 x 0.50 x 0.61	HVB-R25-19SC	110027
25	39	0.03 x 1.25	F	2.10 x 0.50 x 0.61	HVB-R25-39SC	110028
50 ¹	19	0.06 x 1.25	M	2.65 x 0.60 x 0.61	HVB-R50-19PC	110033
50 ¹	39	0.06 x 1.25	M	2.65 x 0.60 x 0.61	HVB-R50-39PC	110034
50 ¹	19	0.06 x 1.25	F	2.65 x 0.60 x 0.61	HVB-R50-19SC	110031
50 ¹	39	0.06 x 1.25	F	2.65 x 0.60 x 0.61	HVB-R50-39SC	110032

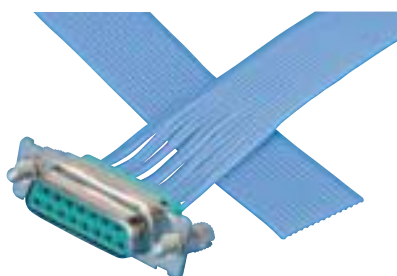
Contact to Cable

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

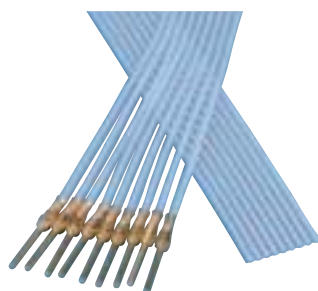
1. Uses two lengths of 25-way ribbon cable



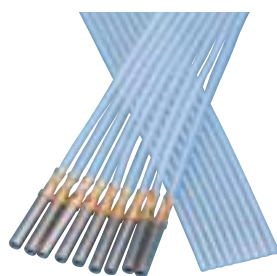
110025 / Male Pin HV Connector to Cable



110023 / Female Socket HV Connector to Cable



110050 / Male Pin HV Contact to Cable



110052 / Female Socket HV Contact to Cable

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
	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
9	39	0.03 x 0.45	F / F	1.22 x 0.50 x 0.61	HVB-R9-392SC	110067
9	19	0.03 x 0.45	F / M	1.22 x 0.50 x 0.61	HVB-R9-19SCPC	112501
9	39	0.03 x 0.45	F / M	1.22 x 0.50 x 0.61	HVB-R9-39SCPC	112502
15	19	0.03 x 0.75	F / F	1.55 x 0.50 x 0.61	HVB-R15-192SC	110068
15	39	0.03 x 0.75	F / F	1.55 x 0.50 x 0.61	HVB-R15-392SC	110069
15	19	0.03 x 0.75	F / M	1.55 x 0.50 x 0.61	HVB-R15-19SCPC	112503
15	39	0.03 x 0.75	F / M	1.55 x 0.50 x 0.61	HVB-R15-39SCPC	112504
25	19	0.03 x 1.25	F / F	2.10 x 0.50 x 0.61	HVB-R25-192SC	110070
25	39	0.03 x 1.25	F / F	2.10 x 0.50 x 0.61	HVB-R25-392SC	110071
25	19	0.03 x 1.25	F / M	2.10 x 0.50 x 0.61	HVB-R25-19SCPC	112505
25	39	0.03 x 1.25	F / M	2.10 x 0.50 x 0.61	HVB-R25-39SCPC	112506
50 ¹	19	0.06 X 1.25	F / F	2.65 x 0.60 x 0.61	HVB-R50-192SC	110072
50 ¹	39	0.06 X 1.25	F / F	2.65 x 0.60 x 0.61	HVB-R50-392SC	110073
50 ¹	19	0.06 X 1.25	F / M	2.65 x 0.60 x 0.61	HVB-R50-19SCPC	112507
50 ¹	39	0.06 X 1.25	F / M	2.65 x 0.60 x 0.61	HVB-R50-39SCPC	112508

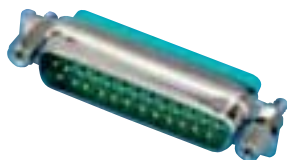
1. Uses two lengths of 25-way ribbon cable



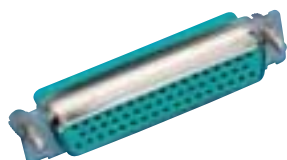
110066 / Female to Female HV
Connector to Connector Extension Cable



112503 / Female to Male HV
Connector to Connector Extension Cable



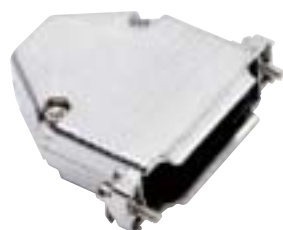
110004 / Male Pin HV Connector
(Contacts Sold Separately)



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
	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
9	F	1.22 x 0.50 x 0.61	110009, 110035	9D-HVCS	110001
15	M	1.55 x 0.50 x 0.61	110008, 110036	15D-HVCP	110002
15	F	1.55 x 0.50 x 0.61	110009, 110035	15D-HVCS	110003
25	M	2.10 x 0.50 x 0.61	110008, 110036	25D-HVCP	110004
25	F	2.10 x 0.50 x 0.61	110009, 110035	25D-HVCS	110005
50	M	2.65 x 0.60 x 0.61	110008, 110036	50D-HVCP	110006
50	F	2.65 x 0.60 x 0.61	110009, 110035	50D-HVCS	110007

Contacts, Type T2 ¹ — 125°C / HV to 1x10⁻⁸ Torr

Number Contacts	Contact		Wire		Model Number	Part Number
	Gender	Dia.	Dia.	Gauge		

Standard Duty Cycle — 10 per Pack

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

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	Model	Part
	With Connector Attached	With	Number	Number

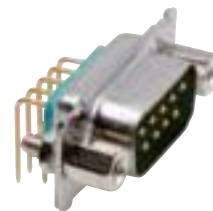
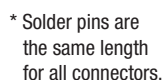
Backshell Strain Relief

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

Tools — for Wiring HV Ribbon Connectors

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

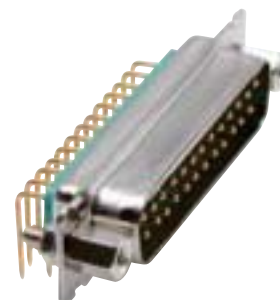
HV PCB Connectors are made of DAP and are designed to be soldered directly to Printed Circuit Boards.



111100 / Male, 9-pin HV PCB Connector



111101 / Male, 15-pin HV PCB Connector

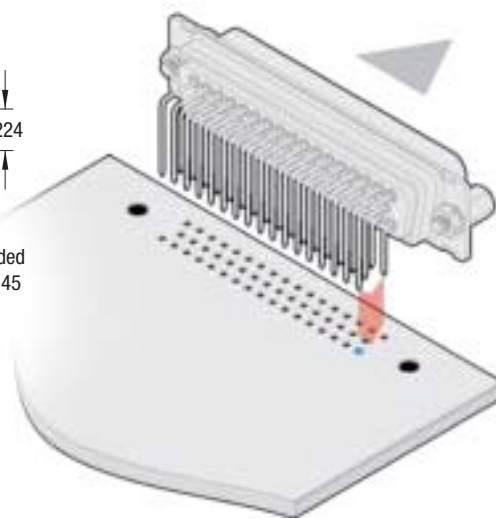


111102 / Male, 25-pin HV PCB Connector

Number Contacts	Connector			Model Number	Part Number
	Gender	W x H x D	B		

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

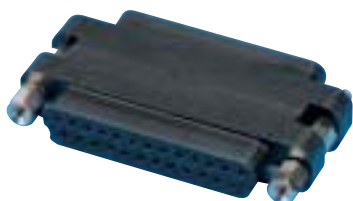
Mount connector with mating face positioned to follow direction of arrows.



50-Pin Connector Depicted



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
--------------------	-----------------	----------------	-----------------	----------------

Connector to Connector

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

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
	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
15	F / F	1.60 x 0.40 x 1.20	15D-AIR-GA-F	103111
25	F / F	2.10 x 0.40 x 1.20	25D-AIR-GA-F	104100
50	F / F	2.60 x 0.50 x 1.20	50D-AIR-GA-F	103131
9	M / M	1.75 x 0.48 x 1.09	9D-AIR-GA-M	112795
15	M / M	2.10 x 0.48 x 1.09	15D-AIR-GA-M	112796
25	M / M	2.58 x 0.48 x 1.09	25D-AIR-GA-M	112797
50	M / M	3.15 x 0.50 x 1.09	50D-AIR-GA-M	112798

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
	Gender	W x H x D		

Connectors

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

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
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Female — Dust Covers

9	F	1	Use only with Air Side Connectors	211078
15	F	1	Use only with Air Side Connectors	211080
25	F	1	Use only with Air Side Connectors	211082
50	F	1	Use only with Air Side Connectors	211084

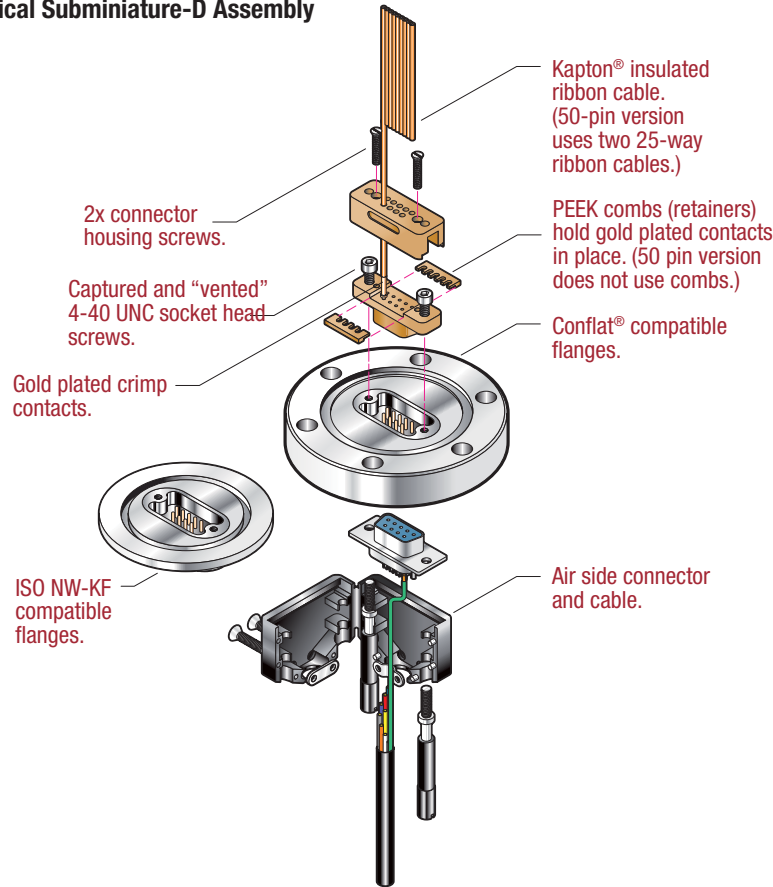
Male — Dust Covers

9	M	1	Use only with Air Side Connectors	211079
15	M	1	Use only with Air Side Connectors	211081
25	M	1	Use only with Air Side Connectors	211083
50	M	1	Use only with Air Side Connectors	211085



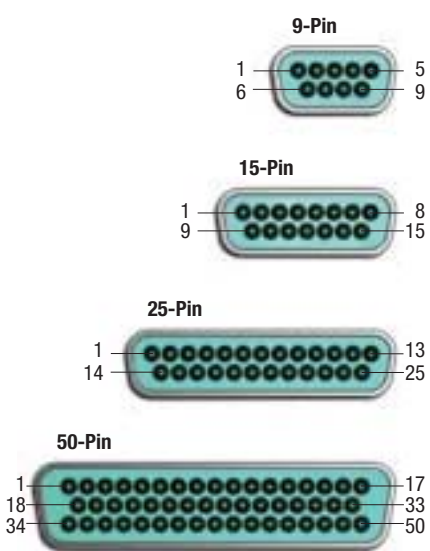
211078 / Female 9D Connector
Dust Cover

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