



# Micro-D MIL-DTL-83513 Type Hermetic Connectors

## 177-705 Solder Cup or PC Tail and 177-706 Insulated Wire Receptacles

### Blind Hole, Rear Panel Mount



**MATES WITH ALL 83513 Pin Connectors**

Micro-D hermetic connectors feature Kovar® alloy shells, in compliance with applicable MIL-DTL-83513 space requirements, and a matched glass-to-metal seal. Helium leak rate is  $1 \times 10^{-7}$  cc's per second. Connectors are 100% intermateable with standard connectors. 177-705H connectors are available with solder cup contacts or PC tails. 177-706H connectors come pre-wired. Socket contacts are Kovar® alloy with gold plating. Rear panel mount, O-ring design avoids the expense of soldering. Attachment to panel occurs via blind tapped mounting threads on the connector. Mounting threads available in standard or metric.

**Table II: O-ring Material**

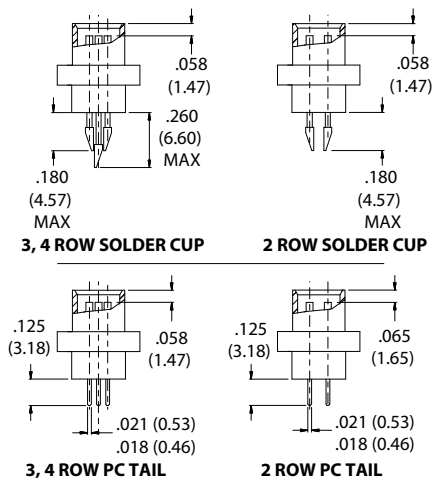
Designator	Material
<b>C</b>	Fluorosilicone, Conductive (CHOSEAL 1298)
<b>E</b>	EPDM (Ethylene-Propylene)
<b>V</b>	Viton (Fluorocarbon; FKM)
<b>N</b>	Nitrile (Buna-N)
<b>S</b>	Silicone (ZZ-R-765)
<b>B</b>	Butyl Rubber (IIR)
<b>K</b>	Kalrez (FFKM)

**Part Number Development**

Sample Part Number	177-705H	15	SS	U	-V
<b>Series</b>	177-705H Hermetic Micro-D				
<b>Contact Layout</b>	9, 15, 21, 25, 31, 37, 51-2, 51, 69, 75, 100, 130 (Table I)				
<b>Contact Type</b>	SS = Solder Cup, Socket    S4 = Solder Cup, Socket, #24 Wire SP = PC Tail, Socket				
<b>Mounting Threads</b>	A = #2-56 UNC    U = #4 - 40 UNC    M = M3 Metric				
<b>O-Ring Material</b>	C, E, V, N, S, B, K; Omit for standard fluorosilicone (See Table II)				

H

### PC TAIL AND SOLDER CUP DIMENSIONS



**Part Number Development**

Sample Part Number	177-706H	31	S	6	K	1	-30	M	-V
<b>Series</b>	177-706H = Hermetic Micro-D								
<b>Contact Layout</b>	9, 15, 21, 25, 31, 37, 51-2, 51, 69, 75, 100, 130 (Table I)								
<b>Contact Type</b>	S = Socket Contacts, Pre-Wired								
<b>Wire Gage (AWG)</b>	4 = #24    6 = #26    8 = #28    0 = #30								
<b>Wire Type</b>	K = M22759/11 600 Vrms Fluoropolymer (TFE) (Not Available in #30 AWG) J = M22759/33 600 Vrms Modified Cross-Linked Tefzel (ETFE)								
<b>Wire Color</b>	1 = White    2 = Yellow, 5 = Color-Coded Stripes Per MIL-STD-681 (#26 gage only) 7 = Ten Color Repeat								
<b>Wire Length Inches</b>	Wire Length In Inches. "30" Specifies 30 Inches.								
<b>Mounting Threads</b>	A = #2-56 UNC    M = M3    Omit for #4-40 UNC								
<b>O-Ring Material</b>	C, E, V, N, S, B, K; Omit for standard fluorosilicone (See Table II)								

### Notes

- Hermetic socket connector mates with all standard MIL-DTL-83513 pin connectors.
- For panel thickness greater than .062, the mounting holes for 100 and 130 must be counter-bored as shown when mating connector has a backshell to prevent interference. Diameters shown are for socket-head cap screws. User to adjust for different screw type.

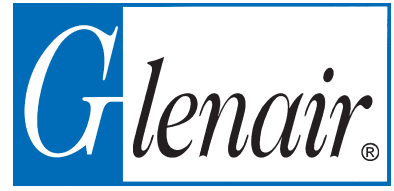
### Performance:

- Outgassing: <1.0% TML & 0.1% CVCM per ASTM-E-595-93
- Hermeticity  $1 \times 10^{-6}$  scche/sec @ 1 atmosphere differential
- DWV: sea level 150 VAC
- IR: 5000 megohms min.

### Material/finish

- Shell: Kovar® alloy/electro-deposited nickel
- Socket contacts: Kovar® alloy/ gold plate
- Insulator: vitreous glass
- Potting: epoxy
- Interfacial seal, o-ring: fluorosilicone

# 177-705H Solder Cup or PC Tail and 177-706H Insulated Wire Micro-D Hermetic Connectors Rear Panel Mount



Micro-D  
Hermetic

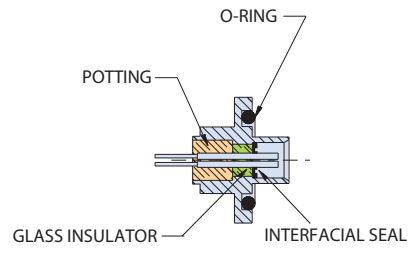
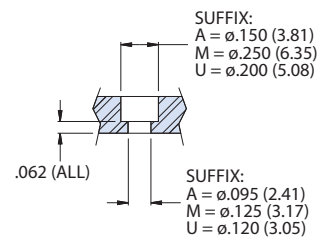
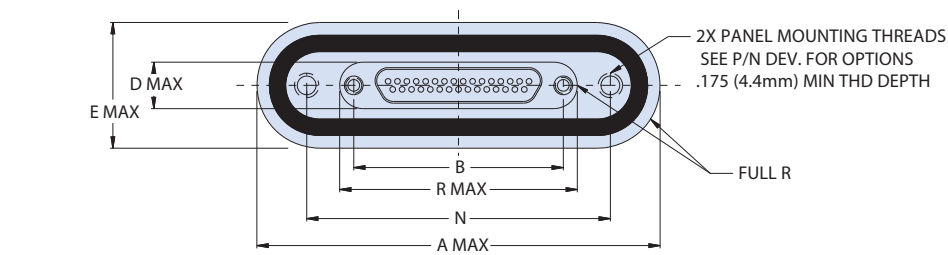
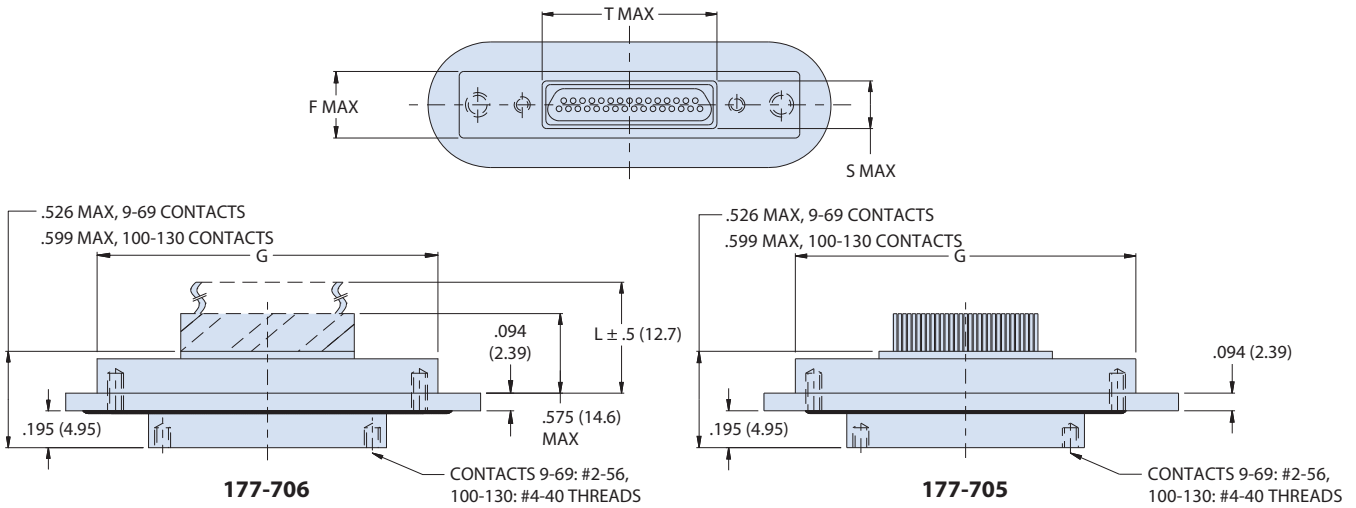


Table I: Dimensions

LAYOUT	A MAX	B	D MAX	E MAX	F MAX	G	H ± .005	J ± .005	N	R MAX	S MAX	T MAX
9	1.488 (37.80)	0.565 (14.35)	0.250 (6.35)	0.675 (17.15)	0.358 (9.09)	1.211 (30.76)	.738 (18.75)	.260 (6.60)	1.011 (25.68)	0.728 (18.49)	0.275 (6.99)	0.410 (10.41)
15	1.638 (41.61)	0.715 (18.16)	0.250 (6.35)	0.675 (17.15)	0.358 (9.09)	1.414 (35.92)	.888 (22.56)	.260 (6.60)	1.161 (29.49)	0.878 (22.30)	0.275 (6.99)	0.540 (13.72)
21	1.788 (45.42)	0.865 (21.97)	0.250 (6.35)	0.675 (17.15)	0.358 (9.09)	1.550 (39.37)	1.038 (26.37)	.260 (6.60)	1.311 (33.30)	1.028 (26.11)	0.275 (6.99)	0.710 (18.03)
25	1.888 (47.96)	0.965 (24.51)	0.250 (6.35)	0.675 (17.15)	0.358 (9.09)	1.650 (41.91)	1.138 (28.91)	.260 (6.60)	1.411 (35.84)	1.128 (28.65)	0.275 (6.99)	0.810 (20.57)
31	2.038 (51.77)	1.115 (28.32)	0.250 (6.35)	0.675 (17.15)	0.358 (9.09)	1.814 (46.08)	1.288 (32.72)	.260 (6.60)	1.561 (39.65)	1.278 (32.46)	0.275 (6.99)	0.955 (24.26)
37	2.188 (55.58)	1.265 (32.13)	0.250 (6.35)	0.675 (17.15)	0.358 (9.09)	1.984 (50.39)	1.438 (36.53)	.260 (6.60)	1.711 (43.46)	1.428 (36.27)	0.275 (6.99)	1.095 (27.81)
51-2 (2 ROW)	2.538 (64.47)	1.615 (41.02)	0.250 (6.35)	0.675 (17.15)	0.358 (9.09)	2.334 (59.28)	1.788 (45.42)	.260 (6.60)	2.061 (52.35)	1.778 (45.16)	0.275 (6.99)	1.650 (41.91)
51 (3 ROW)	2.138 (54.31)	1.215 (30.86)	0.320 (8.13)	0.715 (18.16)	0.398 (10.11)	1.920 (48.77)	1.388 (35.26)	.330 (8.38)	1.661 (42.19)	1.378 (35.00)	0.295 (7.49)	1.095 (27.81)
69	2.600 (66.04)	1.515 (38.48)	0.320 (8.13)	0.715 (18.16)	0.398 (10.11)	2.330 (59.18)	1.695 (43.05)	.330 (8.38)	2.050 (52.07)	1.685 (42.80)	0.295 (7.49)	1.400 (35.56)
75	2.750 (69.85)	1.705 (43.31)	0.320 (8.13)	0.715 (18.16)	0.398 (10.11)	2.520 (64.01)	1.885 (47.88)	.330 (8.38)	2.250 (57.15)	1.875 (47.63)	0.295 (7.49)	1.500 (38.10)
100	2.820 (71.63)	1.800 (45.72)	0.330 (8.38)	0.795 (20.19)	0.555 (14.10)	2.569 (65.25)	2.012 (51.10)	.340 (8.64)	2.312 (58.72)	2.002 (50.85)	0.355 (9.02)	1.675 (42.55)
130	3.120 (79.25)	2.150 (54.61)	0.330 (8.38)	0.795 (20.19)	0.555 (14.10)	2.795 (70.99)	2.360 (59.94)	.340 (8.64)	2.600 (66.04)	2.350 (59.69)	0.355 (9.02)	2.025 (51.44)



# 177-705H Solder Cup or PC Tail and 177-706H Insulated Wire Micro-D Hermetic Connectors Rear Panel Mount

Table III: PC Tail Lengths

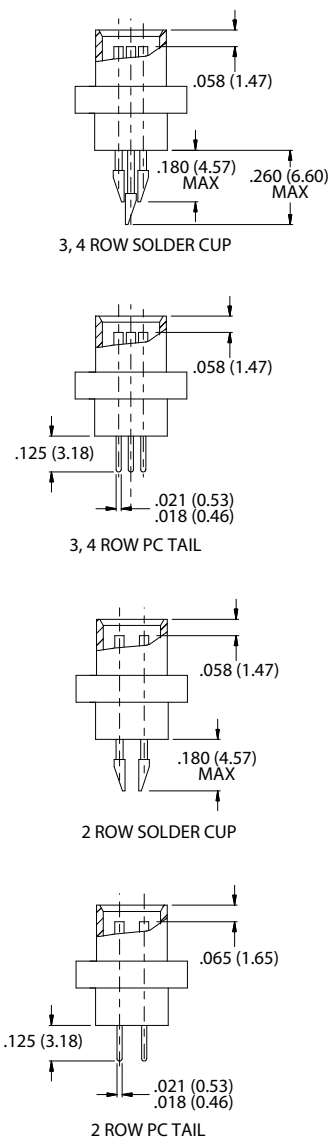
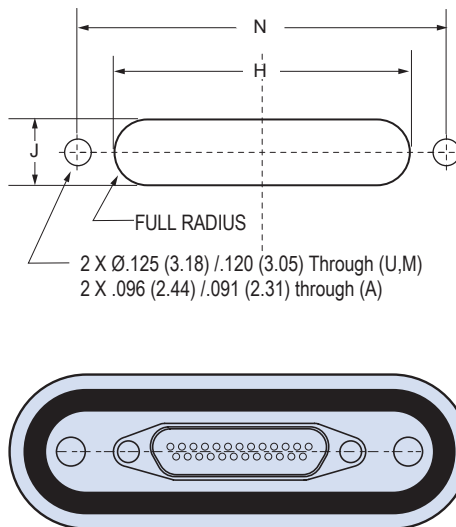


Table IV: Panel Cutout Dimensions for 177-705 and 177-706



Layout	N		H		J	
	In. ± .003	mm. ± 0.08	In. +.005/-0.0	mm. +0.13/-0.0	In. +.005/-0.0	mm. +0.13/-0.0
9	1.011	25.69	.738	18.75	.250	6.35
15	1.161	29.50	.888	22.56	.250	6.35
21	1.311	33.31	1.038	26.37	.250	6.35
25	1.411	35.85	1.138	28.91	.250	6.35
31	1.561	39.66	1.288	32.72	.250	6.35
37	1.711	43.47	1.438	36.53	.250	6.35
51-2 (2 ROW)	2.061	52.35	1.788	45.52	.250	6.35
51 (3 ROW)	1.661	42.19	1.388	35.26	.320	8.12
69	2.050	52.07	1.695	43.05	.320	8.12
75	2.250	57.15	1.885	47.88	.320	8.12
100	2.312	58.72	2.012	51.10	.340	8.63
130	2.600	66.04	2.360	59.94	.340	8.63

**NOTES:**

For panel thickness greater than .062 (1.57) thick, the mounting holes for -100 and -130 must be counter-bored as shown when mating connector has a backshell to prevent interference. Diameters shown are for socket-head cap screws. User to adjust for different screw type.

