Cathode Ray Tube (CRT) Anode Interconnections

The CRT anode lead assemblies shown in this catalog were developed by Reynolds to reliably inter-connect the anode of "heads up" and "heads down" CRT display systems typically found in the avionics suite of high performance military and commercial aircraft.

These display systems usually fit into an area of the cockpit already crowded with other avionics. The CRT anode lead assemblies must be as small as possible, and if the power supply or the CRT need to be removed, they must be easily and reliably disconnected from the power supply.

Reynolds has addressed these requirements in the design of the Max series anode lead assemblies. For example, the Advanced series interface seal of the receptacle can be replaced if the seal is damaged without the costly removal of the receptacle from a potted, high-voltage power supply. The seal and the Advanced series interface sealing system is illustrated in figure 2 on page 11. Right angle attachments present a lower profile, save space and contribute to optimum cable routing and easier mating and un-mating. Both the receptacle and the plug are available in right angle configurations. The FEP Ready-to-Bond cable used on Reynolds anode lead assemblies is small, abrasion and cut-resistant and flexible.

Traditionally, the anode lead has been installed on the CRT by the CRT manufacturer and shipped to the display system manufacturer as a part of the CRT. In many cases the anode lead was electrically attached to the tube and sealed by potting the lead to the tube to assure operation at 70,000 feet altitude. This method of attachment, which is shown in figure 4B on page 17, was effective but created a higher than desired profile.

The CRT industry has tried to use J1-21 and J1-22 anode connections as industry standards. These connections work well at sea level but are unreliable when operated at reduced atmospheric pressure. In creating the Max series, Reynolds improved these connections by changing the material to a special silicone rubber that is nearly indestructible. This provides an excellent electrical and environmental bond to the CRT.

The Max series anode lead assemblies are fabricated by molding the Reynolds Ready-to-Bond cable directly to both the connector plug and the anode connection. This enables the tube manufacturer or the display systems integrator to purchase a complete cable assembly which can be easily bonded to the CRT. If the CRT fails, the lead can be replaced without costly de-potting and re-potting of the CRT. This system of interconnection is illustrated in figure 4A on page 17.

General Specifications

Receptacle Assembly

Male Contact
Design: Spherical radius
Material: Brass
Size: 16 AWG

Body
Material: Diallyl phthalate
Mating Thread: .500-20 UNF

Interface Seal
Material: Silicone rubber

Seal Retainer
Material: Thermoplastic

O-Rings
Material: Silicone rubber

Jam Nut (except P/N 178-8994)
Material: Diallyl phthalate

Electrical (mated condition)
Rated Voltage: 30 KVDC at 70,000 feet
Test Voltage: 120% of rated voltage @ 70,000 feet simulated altitude

Temperature Range
Operating: –55 to +125° C
Storage: –65 to +125° C

Plug Cable Assembly

Female contact
Design: Split finger; closed entry
Material: BeCu, gold plated
Size: 16 AWG

Insulator
Material: ULTEM

Encapsulation
Material: Silicone rubber

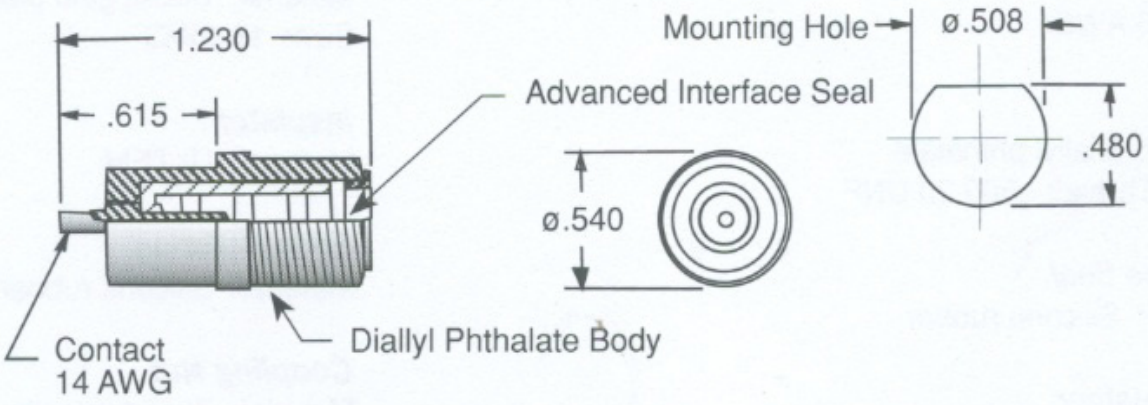
Coupling Nut
Material: Thermoplastic
Mating Thread: .500-20 UNF

Retainer Ring
Material: Stainless steel

Cable
Material Core: .100 diameter FEP
Size: 20 AWG

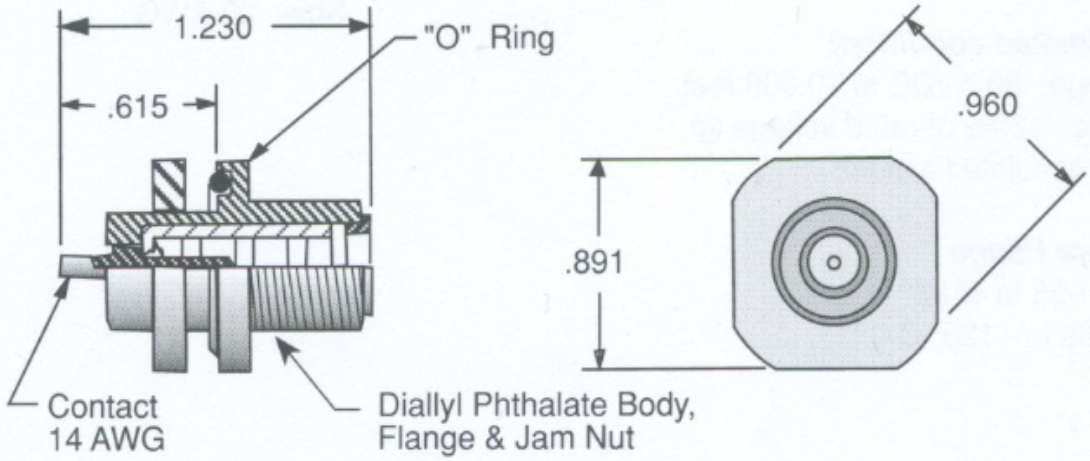
P/N 178-8994
Straight, Non-Shielded Receptacle for Potted Assemblies

Mating see note 1



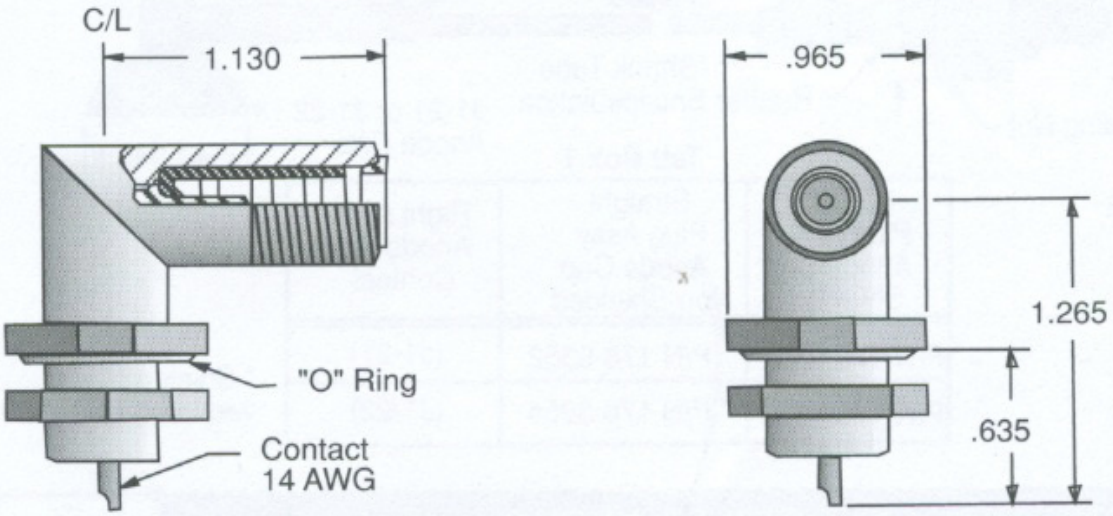
P/N 178-7476
Straight, Non-Shielded Jam Nut Mount Receptacle

Mating see note 1



NOTE 1. Mates all Max series anode lead assemblies (see page 82 & 83)

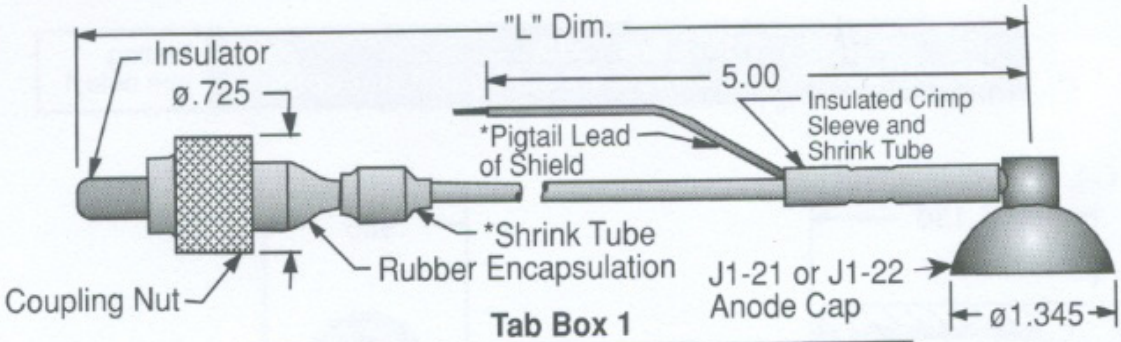
P/N 178-7519 Right Angle, Non-Shielded, Panel Mount Receptacle	Mating see note 1



NOTE 1. Mates all Max series anode lead assemblies (see pages 82 & 83)

P/N: See Tab Box 1
Straight, CRT Anode Lead Assembly with Right Angle Anode Cap Shielded or Non-Shielded

Mating see note 1



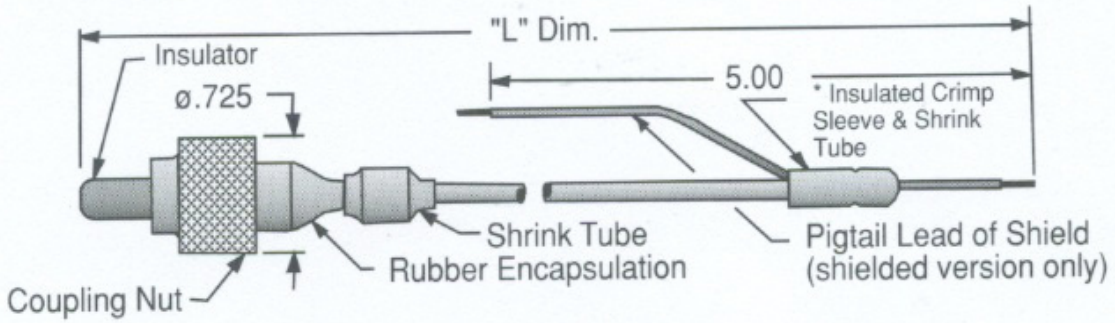
Tab Box 1

Straight Plug Assy. Anode Cap Shielded	Straight Plug Assy. Anode Cap Non-Shielded	Right Angle Anode Cap Contact
P/N 178-9351	P/N 178-9352	(J1-21)
P/N 178-9353	P/N 178-9354	(J1-22)

* Shielded version only

P/N: See Tab Box 2
Straight, CRT Anode Lead Assembly, Shielded or Non-Shielded

Mating see note 2



Tab Box 2

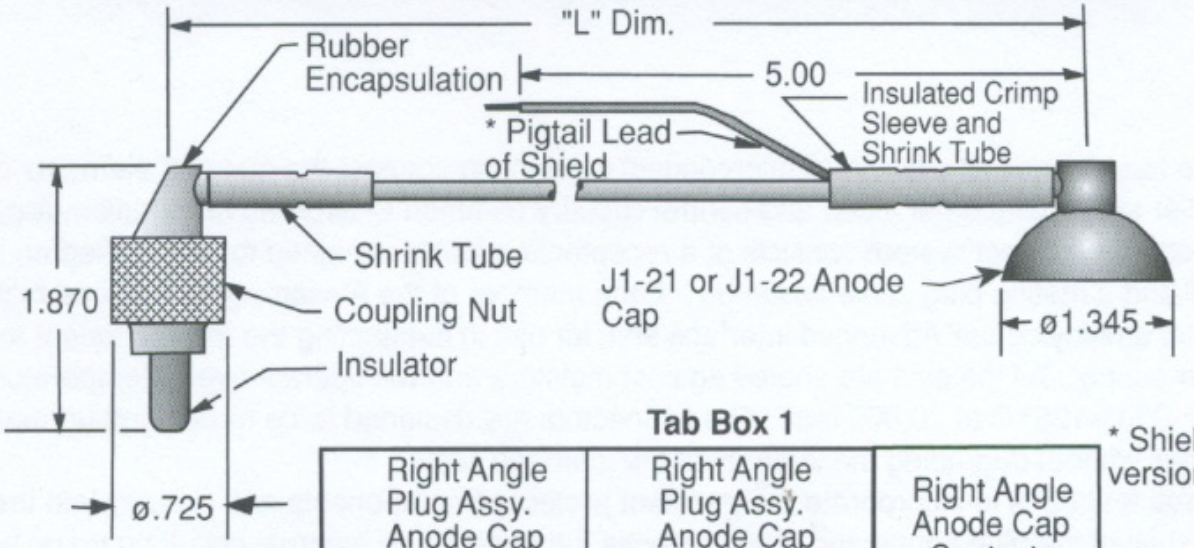
Straight Plug Assy. Shielded	Straight Plug Assy. Non-Shielded
P/N 178-9355	P/N 178-9356

NOTES: 1. Mates all Max series receptacles (see pages 80 & 81) & J1-21 or J1-22 CRT anode cap

2. Mates all Max series receptacles (see pages 80 & 81)

P/N: See Tab Box 1
Right Angle, CRT Anode Lead Assembly with Right Angle Anode Cap Shielded or Non-Shielded

Mating see note 1



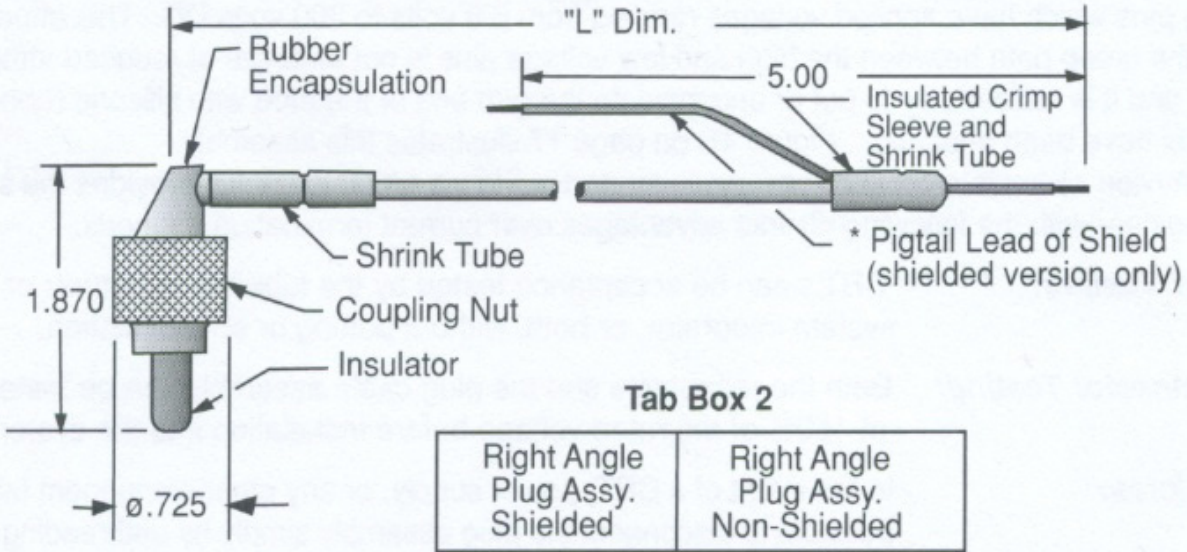
Tab Box 1

Right Angle Plug Assy. Anode Cap Shielded	Right Angle Plug Assy. Anode Cap Non-Shielded	Right Angle Anode Cap Contact
P/N 178-8988	P/N 178-8989	(J1-21)
P/N 178-8990	P/N 178-8991	(J1-22)

* Shielded version only

P/N: See Tab Box 2
Right Angle, CRT Anode Lead Assembly, Shielded or Non-Shielded

Mating see note 2



Tab Box 2

Right Angle Plug Assy. Shielded	Right Angle Plug Assy. Non-Shielded
P/N 178-8992	P/N 178-8993

NOTES: 1. Mates all Max series receptacles (see page 80 & 81) & J1-21 or J1-22 CRT anode cap
2. Mates all Max series receptacles (see page 80 & 81)