



**Introduction: Cathode Ray Tube (CRT) Anode Interconnections**

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

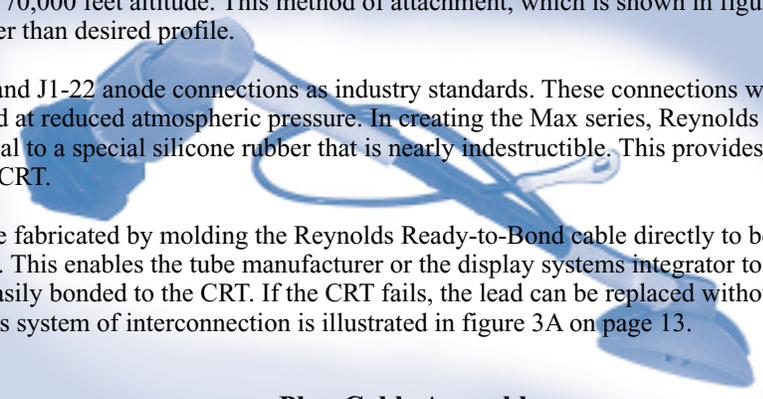
These display systems usually fit into an area of the cockpit already crowded with other avionics. The CRT anode lead assemblies must be as small as possible, and if the power supply or the CRT need to be removed, they must be easily and reliably disconnected from the power supply.

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 3B on page 13, 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 3A on page 13.



**General Specifications**

**Receptacle Assembly**

**Male Contact**

Design: Spherical radius  
Material: Brass, gold plated  
Size: 16 (ø.062)

**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

**Insulator**

Material: Thermoplastic

**Encapsulation**

Material: Silicone rubber

**Coupling Nut**

Material: Thermoplastic Mating Thread: .500-20 UNF

**Retainer Ring**

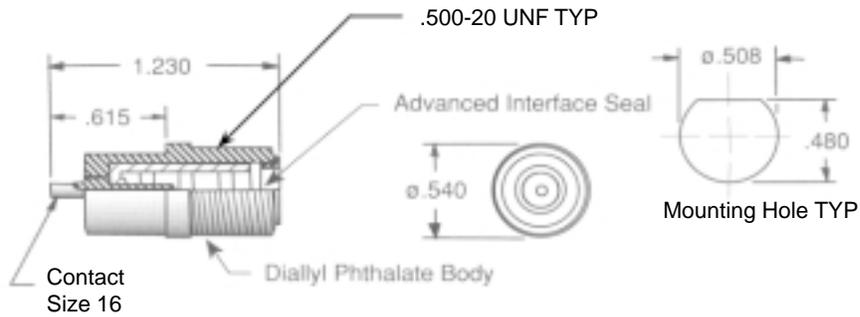
Material: Stainless steel

**Cable**

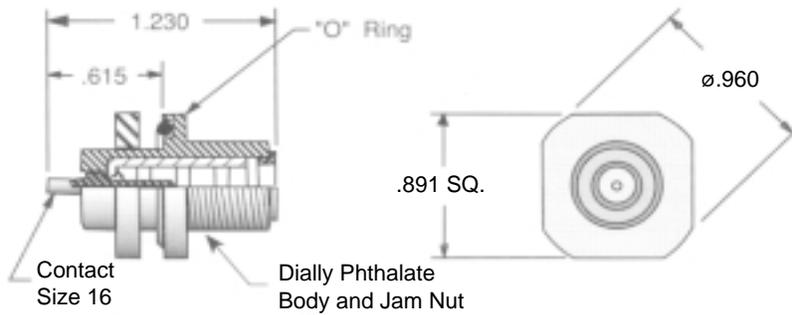
Material Core: .100 diameter FEP  
Size: 20 AWG



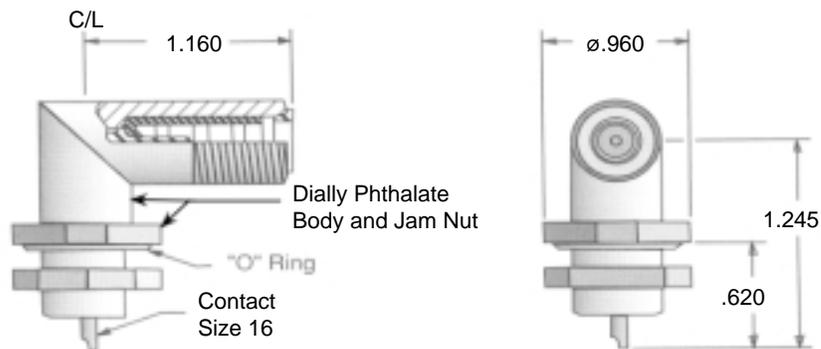
<b>P/N 178-8994</b> Straight, Non-Shielded Receptacle for Potted Assemblies	Mating See Note 1
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<b>P/N 178-7476</b> Straight, Non-Shielded Jam Nut Front Mount Receptacle	Mating See Note 1
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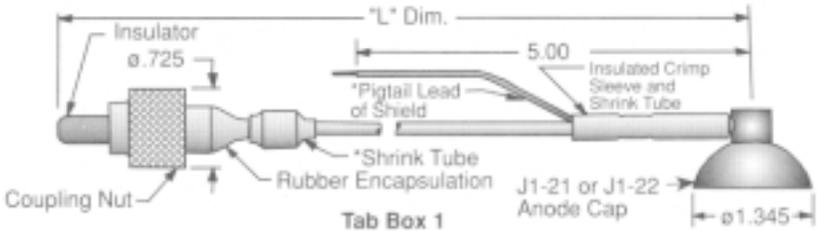
<b>P/N 178-7519</b> Right Angle, Non-Shielded Panel Front Mount Receptacle	Mating See Note 1
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NOTE 1: Mates with all MAX series anode lead assemblies. See pages 53 and 54



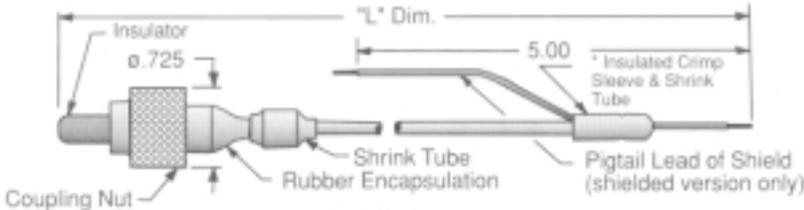
<b>P/N: See Tab Box 1</b>	Mating See Note 1
Straight, CRT Anode Lead Assembly with Right Angle Anode Cap. Shielded or Non-Shielded	



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

\* Shielded version only

<b>P/N: See Tab Box 2</b>	Mating See Note 2
Straight, CRT Anode Lead Assembly Shielded or Non-Shielded	



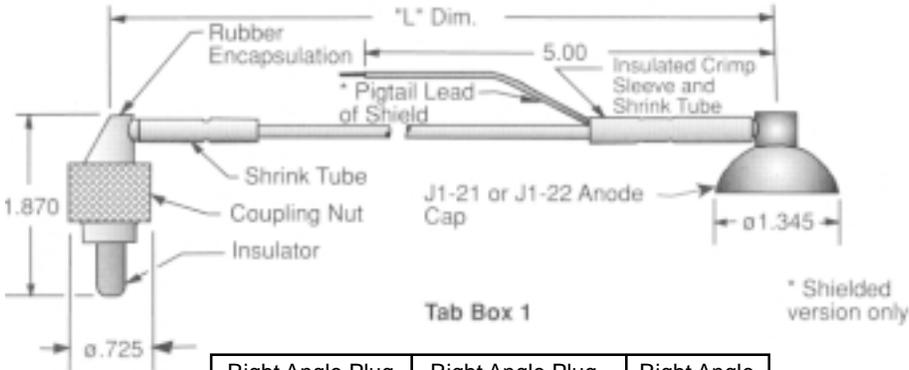
**Tab Box 2**

Straight Plug Assembly Shielded	Straight Plug Assembly Non-Shielded
<b>P/N 178-9355</b>	<b>P/N 178-9356</b>

NOTES: 1. Mates all MAX series receptacles (see page 52) and J1-21 or J1-22 CRT anode cap  
 2. Mates all MAX series receptacles (See page 52)

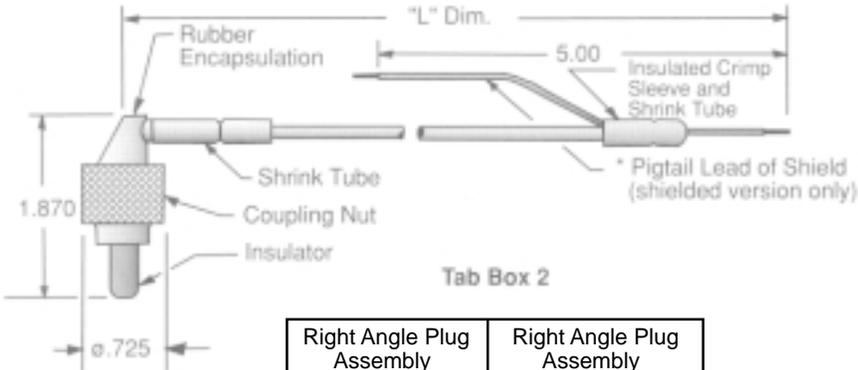


<p><b>P/N: See Tab Box 1</b></p> <p>Straight, CRT Anode Lead Assembly with Right Angle Anode Cap. Shielded or Non-Shielded</p>	<p>Mating See Note 1</p>
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Right Angle Plug Assembly. Anode Cap Shielded	Right Angle Plug Assembly. Anode Cap Non-Shielded	Right Angle Anode Cap Contact
<b>P/N 178-8988</b> <b>P/N 178-8990</b>	<b>P/N 178-8989</b> <b>P/N 178-8991</b>	(J1-21) (J1-22)

<p><b>P/N: See Tab Box 2</b></p> <p>Right Angle, CRT Anode Lead Assembly Shielded or Non-Shielded</p>	<p>Mating See Note 2</p>
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Right Angle Plug Assembly Shielded	Right Angle Plug Assembly Non-Shielded
<b>P/N 178-8992</b>	<b>P/N 178-8993</b>

NOTES: 1. Mates all MAX series receptacles (see page 52) and J1-21 or J1-22 CRT anode cap  
2. Mates all MAX series receptacles (See page 52)