

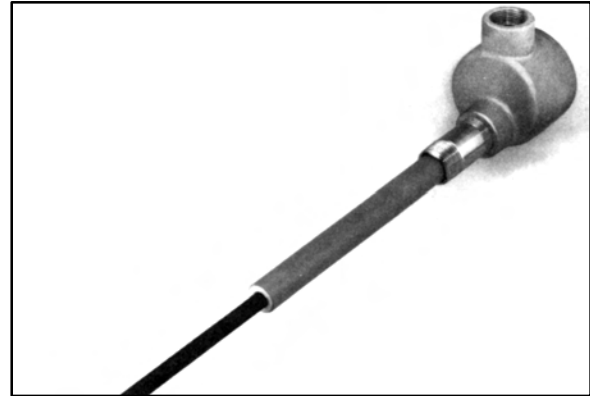
Platinized Niobium/Titanium

Probe Anodes

For Confined Installation Areas

In steel vessels, such as condenser water boxes, heat exchangers, and heater treaters, where access is difficult and space is limited, Corrpro manufactures platinized probe anodes for thru-shell mounting. The anodes are made using either titanium- or niobium-rod substrates, which are covered with a platinum coating. An oxidizing film inherently coats the surface of titanium and niobium, assuring that the substrates will remain stable, and will not change shape or be consumed during operation. The film also makes the substrate surface relatively nonconductive, and electrical discharge therefore occurs through the platinum coating. The coating is electroplated to the substrates in thicknesses ranging from 100 to 300 microinches, and is consumed at a rate of 8 to 16 mg/amp.-yr. in saltwater environments. The recommended current density for both types of probe anodes is between 50 and 300 amp./ft.² in saltwater electrolytes. The voltage across the titanium or niobium at the electrolyte interface, however, should not exceed the breakdown voltage of the protective oxide.

Corrpro probe anodes are manufactured with a proven thru-shell assembly. The assembly consists of a stainless steel nipple filled with a moisture-resistant sealant. Once the anode is placed in this metal nipple and filled with the sealant, it is then bonded with G-10 fiberglass. The fiberglass resists water flow and lends extra support to the anode. Prior to shipping, each anode connection is pressure tested to ensure a tight seal. The anodes are also adaptable for mounting while the vessel is under pressure.



Typical Applications

Probe anodes are designed for use in heater treaters, pressure vessels, condenser water boxes, and other aqueous processing tanks where high temperatures and pressures may exist. The two types of substrates, niobium and titanium, provide Corrpro probe anodes with exceptional resilience. They also permit the anodes to operate in temperatures up to 175°C, and to perform well in chloride environments. Neither type should be used in highly acidic electrolytes.



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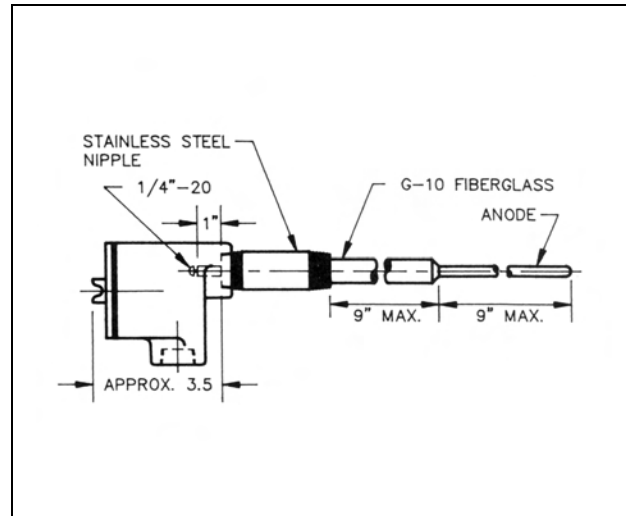
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Platinized Niobium/Titanium Probe Anodes

Ordering Procedure

Corrpro probe anodes are custom made to the customer's specifications. To order the required anode for your structure, indicate that you need a platinized niobium or titanium probe anode, and specify the quantity desired, the anode diameter, length, and platinum thickness, along with the G-10 fiberglass length, and the fitting diameter and length. Probe anodes are available solid or copper cored. An example is provided to help illustrate this process.

Ordering Procedure Example	
ITEM	EXAMPLE
Quantity	25
Anode Material	Platinized Niobium Copper-Cored Probe
Anode Dimensions:	
Diameter	0.5 in.
Length	18 in.
Platinum Thickness	100 min.
G-10 Length	9 in.
Fitting O.D.	1 in.
Fitting Length	3 in.



Standard Dimensions*

ANODE Æ		PIPE NIPPLE N.P.T. Æ		STAINLESS STEEL BODY LENGTH		PLATINUM COATING THICKNESS
in.	(mm)	in.	(mm)	in.	(mm)	µin. (µm)
0.25	(6.4)	1.0	(25.4)	3.0	(76.2)	50-300 (1.270-7.620)
0.50	(12.7)	1.0	(25.4)	3.0	(76.2)	
0.75	(19.1)	1.0	(25.4)	3.0	(76.2)	

*Anodes may be ordered with any combination of the above options, or custom made to specifications.



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