

CORROSION RESISTANCE



Material/Finish	Aluminum: Hard Anodized	Aluminum: Anodized w/ Polyamide Epoxy coating	Aluminum: Electroless Nickel Infused	Aluminum: PTFE/PFA Coating	Stainless Steel: 300 series
Appearance	Silver-gray with a low gloss appearance	Black with a medium gloss finish	Medium gloss silver finish	Glossy black/ optional white finish	Silver; low to medium gloss unless polished
General Properties	Good general corrosion properties in most "natural" environments with pH from 4.5 to 8.5. Good resistance to salt air environments. The coating is extremely hard and resistant to abrasion.	This epoxy coating is a relatively thick coating which creates a barrier against many of the chemicals which anodizing alone cannot adequately resist. It will resist more acidic or basic environments than anodizing alone.	Uniformly thick coating with essentially no porosity and a reasonably high hardness. The coating is pure, tough, hard, and resistant to many types of corrosion media.	This coating provides complete surface coverage and exhibits excellent corrosion resistance properties in a wide variety of applications. In addition, it is FDA approved for food contact.	304 and 316 Stainless steel are the most commonly used alloys. Both have good corrosion resistance but 316 is generally considered superior, however more expensive.
Relative Cost to Purchase	Lowest cost option	Moderate	Moderately high	Moderately high	Highest cost option by a significant margin
Performance Limitations	Highly acidic or basic environments will break down the coating.	Good general corrosion resistance, particularly in salt or alkaline environments. Limited resistance to acids. Surface chalking will occur when exposed to UV radiation. Also suitable for low concentrations of caustic washdown solutions.	The coating will provide enhanced corrosion protection in very acidic environments but will not withstand attack from strong alkaline media. Also suitable for low to medium concentrations of caustic washdown solutions.	These coatings are resistant to any environment into which an actuator would be installed. Provided the integrity of the surface is intact, the coating can resist a broad array of chemical environments at temperatures up to 250°C.	Although Stainless Steel does offer enhanced corrosion resistance, it also is dramatically higher in both cost and weight. The weight differential will often necessitate the use of special machinery.



Increased Corrosion Resistance

Material/Finish	Aluminum: Hard Anodized	Aluminum: Anodized w/ Polyamide Epoxy coating	Aluminum: Electroless Nickel Infused	Aluminum: PTFE/PFA Coating	Stainless Steel: 300 series
General Indoor Atmosphere	AR	BR	BR	BR	BR
Outdoor Atmosphere, Non-Exposed	AR	BR	BR	BR	BR
Outdoor Atmosphere, Non-Exposed	AR	BR	BR	BR	BR
Outdoor Atmosphere, Exposed with Salt Spray	AR	AR	BR	AR	BR
Caustic Washdown: Low Concentration	NR	LL	AR	AR	BR
Caustic Washdown: High Concentration	NR	LL	LL	AR	AR

Legend

BR	Better than Recommended; may cost significantly more than necessary for reliable long-term service
AR	Acceptable and Recommended
LL	Limited Life; actuator will function for a period of time with a shortened life due to external corrosive attack
NR	Not Recommended

The service guidelines presented here are intended to provide general information about the service limitations and performance of coated actuators. Tru-Flo should be contacted to verify the suitability of the coating in a specific environment.



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