

EL-O-Matic F-Series Corrosion Protection System

Description

The corrosion protection system of a standard EL-O-Matic F-Series pneumatic actuator consists of the following treatments or materials:

Electrophoretic finish on springs

Springs are protected from corrosion using an electrophoretic finish.

Anodize or chromate pre-treatment

The housing and end caps get a anodize or chromate pre-treatment prior to painting. The pre-treatment takes care of a perfect bonding of the paint layer to the aluminium housing and gives additional corrosion protection to the bore of the housing.

Powder coat

- Polyurethane powder coating for exterior use.
- The powder coating is applied cold using automatic electrostatic spray equipment and is cured for about 10 minutes at a minimum of 200°C (392°F) offering excellent light and weather resistance.
- The powder coating thickness is between 80 and 160 microns (3.15 and 6.3 mils).
- Good chemical resistance against most bases, acids, solvents, alkalis and oils at normal temperatures.
- Excellent exterior mechanical durability.
- The coating has passed a salt spray test according to ASTM B117 for 1,000 hours.

The powder coating is virtually solvent free, and therefore environmentally friendly.

High grade & hard anodized aluminium pinion

Actuators with high grade & hard anodized aluminium pinions, passed a 1,000 hours salt spray test. Optional stainless steel pinions are available for a higher corrosion resistance.

Stainless steel or Deltatone treated external steel parts

External parts are stainless steel or steel alloy with a Deltatone® treatment for optimum protection and durability.

The chemical and durability assessment

All these components, treatments and finishes, including the durable pinion design, anodized surface finish, standard powder coat paint and Stainless steel treated external fasteners shows no decline of actuator functions after 1,000 hours salt spray test.

Technical Data

Coating :	Polyurethane powder coating for exterior use.
Salt spray test :	ASTM B117: 1,000 hours
Color :	Yellow (RAL 1007)
Materials: Housing:	Chromated aluminium alloy
Endcaps:	Sizes 25 to 600: Anodized and polyurethane powder coated Size 12 and 950 to 4000: Chromate and polyurethane powder coated
Pistons:	Chromated aluminium alloy
Pinion:	High grade aluminium alloy, hard anodized (Option: Stainless steel)
Springs:	Electrophoretic finish
Fasteners:	Stainless steel or alloy steel with Deltatone® treatment
Type Sticker:	Nylon
Application:	Standard EL-O-Matic F-Series pneumatic actuators

Table 1. Test result polyurethane powder coating

No	Item	Standard	Specification
1	Hardness	ASTM D3363 Pencil (Mitsubishi Uni)	H
2	Adhesion	ISO 2409, ASTM D3359 Cross hatch test (2 mm)	Gt (0) 100% Adhesion
3	Impact test	ASTM D2794 5/8" Ball (direct)	Min. 60 lb.in without detachment
4	Bend test	DIN 53152, ISO1519, ASTM D522	Min 3.2 mm without cracking
5	Resistance to humid atmospheres	ASTM D543 3% H2SO4, 4 hours	No Blistering
6	Alkali resistance	ASTM D543 10% NaOH, 4 hours	No Blistering
7	Water resistance	DIN 50017, min.	No Blistering
8	UV resistance	ASTM G 154 (UVB-313)	Excellent color and gloss retention

1. This data sheet contains general information as supplied by the paint supplier and describes typical properties for the coating.