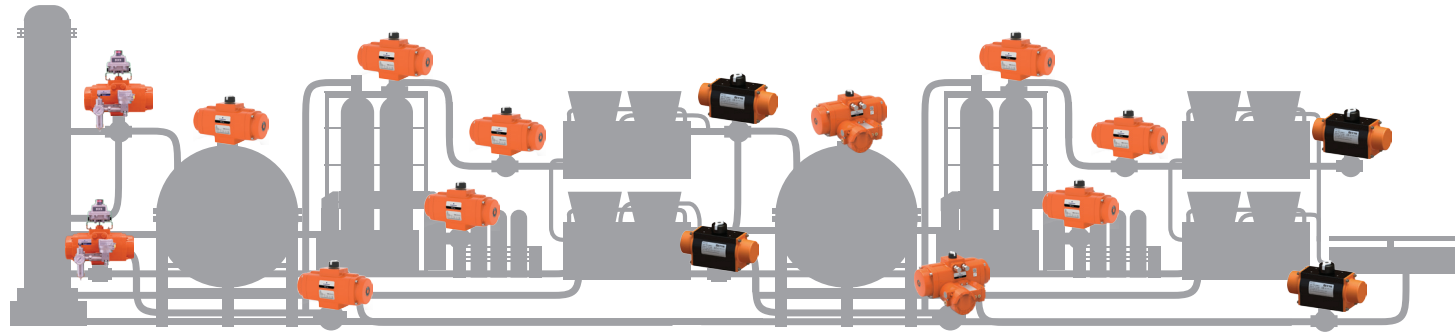


# Considerations for selecting the optimal Rack & Pinion actuator

As much as 43% of unplanned downtime is caused by equipment failure. Selecting the right actuator for the job improves plant performance and reduces long term cost of ownership.



*“Lost production can equate to between 60 to 90% of total maintenance costs in process industries.”*

–Maintenance Performance Assessment - Strategies and Indicators, in Department of Production Economic, Hagery, M. and M. Johannsen

## Reliability

Emerson’s actuator design philosophy makes long working life a core tenet. All Bettis pneumatic actuators exceed basic requirements of EN 15714-3 and have been rigorously tested for long cycle life.

### Consider:

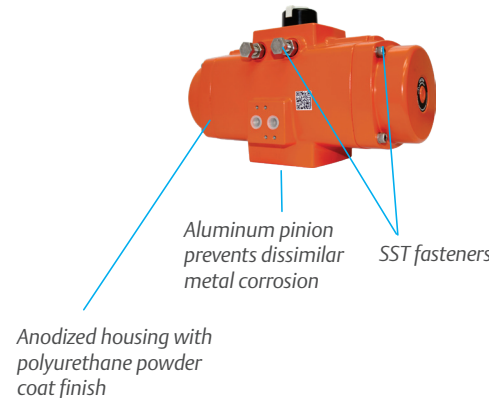
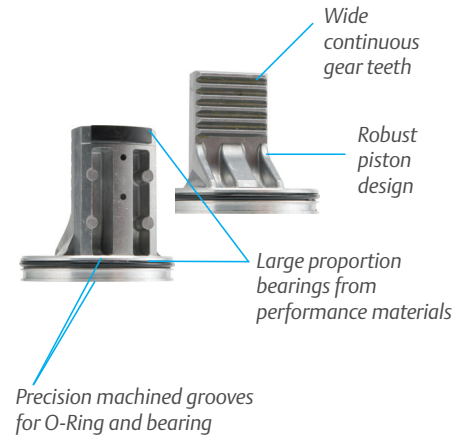
When reliability matters most, select an actuator with large proportion bearings, pressure balanced pinion, high quality materials for seals and wear strips, and precision machining.

## Cost Effectiveness

Cost is always part of the criteria during the selection process. To maintain productivity and profitability, you need to ensure your equipment matches your clean or corrosive environmental requirements.

### Consider:

Understand the application and consider long term cost of ownership. The selection guide on the next page can help.



## Durability

To prevent down-time, products need not only be reliable but also durable. Bettis actuators are built tough with excellent corrosion protection methods to provide years of performance.

### Consider:

Determine the corrosion resistance required for your environment. For long life in harsh areas, select actuators with aluminum or SST pinions, anodized bodies, quality powder coat finishes, and SST fasteners.

## Automation Level

Emerson offers a range of control solutions, or sells bare actuators that can be automated by the customer.

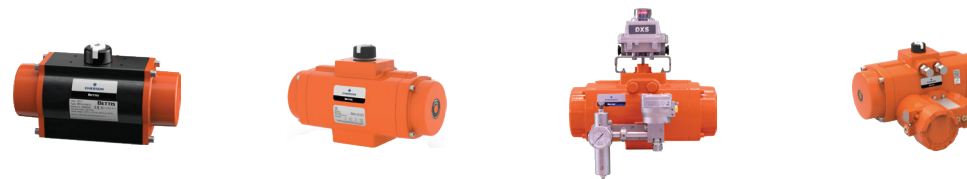
### Consider:

Understand end user requirements and sophistication of the valve integrator. In many cases, procurement, installation, & maintenance can be simplified with pre-configured or integrated control solutions. The selection guide on the next page can help.

*The Bettis rack and pinion portfolio allows you to match the right actuator to the application.*



# Rack and Pinion Actuation Selection Guide



What is the application?		Bettis RPX	Bettis RPE	Bettis RPE (VOS-PAC)	Bettis Q
Critical process fluid systems		⊖	●	●	●
Non-critical process fluids systems		●	●	●	●
Water / non-critical ancillary systems		●	●	●	●
Other general manufacturing systems		●	●	●	●
Actuator Cycle Life?					
Up to 500.000 open/close cycles		●	●	●	●
More than 500.000 open/close cycles		○	●	●	●
Special application criteria?					
Extended/ Full Stroke Adjustment		● Range 0-60°	● Range 0-90°	○	● Range 0-90°
Fast Opening / Closing		⊖	●	●	○
Frequent Operation / High Cycle		⊖	●	●	●
Optional Stainless Steel Pinion		○	●	●	○
Where is the actuator located?					
Non-coastal	Indoor / protected environment	●	●	●	●
	Outdoor atmospheric conditions	●	●	●	●
	Exceptionally dusty / dirty environment	⊖	⊖	⊖	●
Coastal	Indoor / protected environment	●	●	●	●
	Salty air environment	⊖	●	●	●
Off-Shore	Indoor / protected environment	○	●	●	⊖
	Outdoor (Excluding Splash Zone) (Note 1)	○	⊖	⊖	○
ISO 12944 Corrosion Category Classification	Moderate (C3)	●	●	●	●
	Severe (C4)	⊖	●	●	●
	Very Severe (C5) (Note 1)	○	● C5-High	● C5-High	⊖ C5-Medium
Actuator control preferences?					
I prefer select and install my own controls		●	●	○	○
Select from several pre-configured engineered solutions		○	○	●	⊖
Integrated actuator and controls for simplified procurement, installation, and maintenance		○	○	○	●

● = Recommended      ⊖ = Acceptable      ○ = Not Recommended / Not Available

**Note 1:** For aggressive corrosion environments, it is recommended to use the optional A4 grade stainless steel fasteners.

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