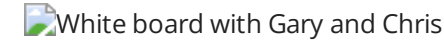


Why You Need to Consider Total Cost of Ownership for an Electric Actuator

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One of the main considerations when [selecting an actuator for your linear motion system](#) is cost. How deeply do you examine the associated costs, though? Should one only concern themselves with the initial price of the unit? The initial cost is important, but only one aspect of the total cost of ownership. The Total Cost of Ownership is the accumulated expected costs associated with the actuator over its service life. This post examines items such as maintenance, repair, production downtime, and more. It is necessary to consider all these to understand the true cost impact and value of a hydraulic, pneumatic, or electric actuator.

 White board with Gary and Chris

Additional Components

One of the initial considerations is what you need to purchase beyond the actuator itself. If you're designing a full linear motion system, you'll need to purchase additional components. All intelligent systems require a motor, drive, interface and controls. Hydraulic systems require hoses, oil, an oil reservoir and pumps. Pneumatic systems require most of the same components as hydraulic solutions but require air compressors rather than oil reservoirs and pumps. The additional components for pneumatic and hydraulic solutions add up, especially when you consider the maintenance and other costs associated with these components (see below).

Energy Consumption

Two of the biggest benefits of an electromechanical system are its operating costs and associated energy efficiency. With an electric actuator, you only pay for the energy (electricity) you consume. Electricity is only drawn while using the actuator. Pneumatic and hydraulic solutions require pumps or compressors to activate and run regularly to ensure there is adequate pressure in the system to provide motion and thrust. This, over the course of a machine's or production line's life, can use a more significant amount of electricity. The results being unnecessary costs to the user.

Maintenance Costs

You'll experience fewer maintenance costs with electric systems. With electromechanical actuators (EMAs), your costs come from labor and maintaining the seals and critical drive elements (bearing, ball nuts, screws, etc.). Generally, seals and sealing components last 2-5 years depending on the duty cycle and severity of the application. The service lives of drive elements can vary depending on the applied load to the unit, but typically always outlast sealing components.

Maintenance is more profound with hydraulic and pneumatic units. In addition to making sure seals aren't leaking, you also need to maintain the hydraulic oil tank, which is the main power supply. This type of system requires regularly checking, cleaning, and replacing oil; and maintaining and inspecting hoses, pumps and compressors.

Repair and Safety Costs

While each type of systems can have repair costs if something breaks, hydraulic and pneumatic systems have the added risk of leakage, which has both cost and safety implications. External leaks are generally easy to notice. Broken fluid hoses leak oil onto the shop floor or machinery increasing employees' risk of injury. The leaked oil can be flammable and needs to be addressed quickly. Broken air hoses can whip around like a bullwhip and injure workers and/or damage equipment.

In addition, internal leaks can develop with pneumatic and hydraulic solutions, and are not always easy to identify; but can cause additional damage if not repaired. Signs of internal leaks include loss of pressure and functionality. Simply put, the actuator won't achieve the performance it should as there is an inadequate amount of fluid and pressure to perform the action.

In general, repair costs are higher for hydraulic and pneumatic actuators because there are more components (pumps, hoses, compressors, etc.) that can break or need service. EMAs incorporate less components to provide motion and force, which makes these units easier and more cost-effective to repair over the life of the actuator.

Costs are always a consideration in the actuator selection process. It's important that you understand all costs associated beyond the initial upfront cost. At Hunt Valve Actuator Division, our engineers help you understand the full value of the linear motion systems we design. From off-the-shelf products to completely customized solutions, we can help with your unique needs. [Contact us](#) or [request a quote](#) today.

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(540) 857-9871