What are the benefits of Electric Linear Actuators compared with Pneumatic Systems?

- Air Systems always have LEAKS which costs money because the compressor is still running to produce air which is wasted.
- Air Systems use air even when motion is not required, electric only use energy when it is needed hence EFFICIENT up to 90% savings.
- Air-lines / seals wear & split due to contamination & age so need constant MAINTENANCE/ replacement. Often many km of hoses!
- It is not possible to get REPEATABLE constant air pressure, since cylinders are always switching on and off around the factory running on the same compressor, electric cylinders always give the same result e.g. In food / sealing application for example this is critical.
- Although the initial cost of Electric Actuator is more than Pneumatic (maybe 3-5 times more), the extra capital cost is usually paid back WITHIN 12 months (NOT including air leaks - see US Report below), reduces carbon and no purchase of compressor is needed.
- Electric linear motion is a CLEAN technology, hence is preferred in many industries e.g. Food, Water, Medical, Pharma Industries.
- Air systems are very difficult to control in terms of positioning and levels of force due to seal stiction and over shoot. Air is not solid.
- Health and safety directive states machines should operate below 85dbA@1m, electric systems are much quieter than air systems.
- Large End Users are moving away from costly pneumatic systems to REDUCE ENERGY, save carbon and greenhouse gases. Reduced Insurance + no compressors to audit / maintain. No capital cost, Carbon Friendly. Electric only uses energy when moving applying force / load.
- ASK your OEM’s to give the end users the CHOICE of all Electric vs. an inefficient Air system.
- Based on a University of Pittsburgh study in 2003, for a continuous duty welding application, the energy cost to operate a servo electric actuator was 1/10 the cost of using air to power the required pneumatic cylinder to power the same actuator. £470 vs. £ 4,700 per year without any air leaks!! This 10:1 ratio is well know in Valve / Process Control industry.
- Improved Cycle Rates – speeds of up to 2m/s are available and accel rates of 25g = 50ms to max speed – means up to 5Hz oscillation.
- Accountability – it is possible to accurately measure + datalog the applied current and position during the cycle, hence applied force / dosage, it is possible to create an accurate history log of this information and give assurance / evidence that the sealing force / dosage was applied as demanded.
- Reduced Waste - Cost of miss-sealing / incorrect dosage based duty can be high cost. Less miss-sealing = better quality, better accuracy equals less waste.