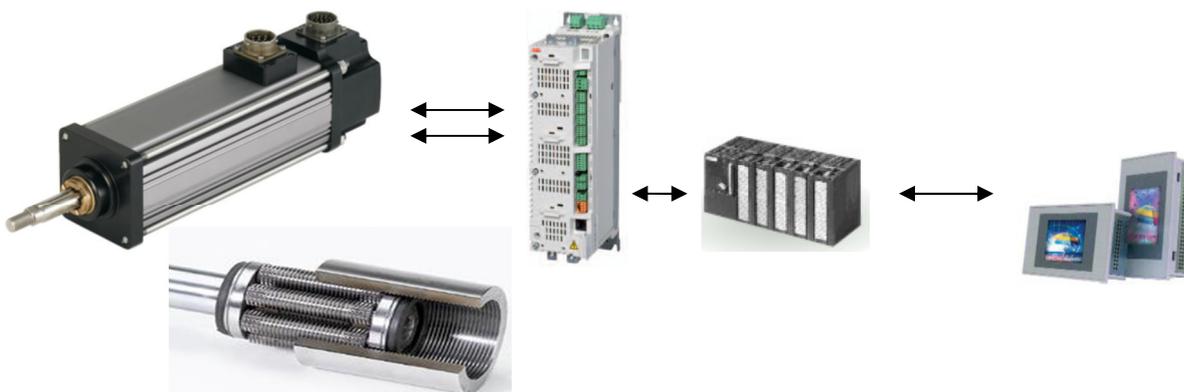


**Benefits of “Electric Cylinders” over hydraulic are as follows:-**

- 1) Hydraulic systems are at best 50% efficient, compared with 85-90% efficiency of a servo electric motor / actuator system. Hence **40% energy saving**.
- 2) Hydraulic systems always are using energy even when motion is not required, since the pump continues to run to keep pressure. This means generally **75% energy reduction**.
- 3) Electric Actuators are very **LOW MAINTENANCE**, since there are no oil hoses, cylinders or seals to repair – massive ongoing problem. **No oil temperature changes**, etc.
- 4) Good for **ENVIRONMENT** since there is no oil used with an electric system. No disposal.
- 5) In high temperature applications like power stations, boilers and military there is **NO FIRE RISKS** of oil, hence no Fire resistance fluids are needed, which in fact are very bad for health, expensive (and can cause cancer).
- 6) The physical size of an Electric system is much **SMALLER** than hydraulic system since there is no oil pump, or oil tank, filters, oil. No Cooling circuit required.
- 7) Electric systems are much **EASIER TO INSTALL** and control since they used standard Automation principles, using digital and analogue signals to accurately control the speed, force and position. It is also possible to easily synchronise axis e.g. press applications.
- 8) **TOTAL CONTROL** – Infinite and very accurate control of Speed, Position and Force.
- 9) There is usually **NO EXTRA COST** selecting an electric system vs. Hydraulic - once you add in the cost of the oil tank, hoses, oil pump, filtering system, oil, etc. Food grade oil is expensive.
- 10) Electric linear motion is a **CLEAN** technology, since there is no dirty oil contamination issues, hence is preferred by industry.
- 11) Large End Users are moving away from costly oil based systems to reduce energy, **SAVE CARBON**, reduce their carbon footprint and remove oil from their sites.
- 12) **Cost of Maintenance** is very expensive since the site engineers must have the necessary training, complete risk assessments, authorise and book the downtime with the production planning. Reduced Factory Output due to maintenance = huge ongoing costs to the factory. It is recommended to re-grease the roller screw once a year which takes just 20 mins. There is also no danger of ball bearings falling out over the floor.
- 13) Product **LIFETIME** – typically because of the precision patented Roller Screw Design of Exlar Actuators and increase contact surface area, the lifetime is usually approx 10 years (please ask for lifetime a calculation data sheet based on your application specifics).
- 14) **Noise Levels** – Health and safety directives and insurance agencies put pressure on companies to reduce factory noise. Noise levels typically 30% lower with electric systems.
- 15) Longer **TOOL LIFE** virtually guaranteed. No slamming of the mould hence less stress.
- 16) Enhanced **CYCLE RATES**, electric actuators can be faster and started sooner by the operator.
- 17) **No Flow rate problems** associated with Low temperatures.
- 18) Health and safety – in terms of **NO DANGEROUS** high pressure hydraulic oil leaks.
- 19) **TOTAL OWNERSHIP COST** – Looking at the total product life-cycle cost of the system, the total cost of ownership is optimised and kept to a minimum due to best performance and lowest maintenance.
- 20) **Slip hazard** – avoid slipping on oil which has leaked from the hydraulic cylinders.



**Example of the size of a hydraulic oil pumping system, accumulator, motor, oil tank, filters.**

