

Kyntronics Electro-Hydraulic Actuators Advantages over Central Hydraulic Systems

While Central Hydraulics (CH) are a well-established motion control solution, Kyntronics' innovative EHA (Electro-Hydraulic Actuation) technology provides a simpler, smaller, more reliable, and more cost-effective alternative.

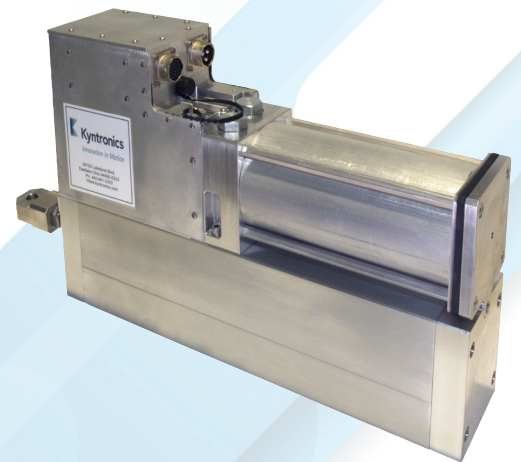
Central Hydraulic Systems

A CH system design requires a number of considerations and tradeoffs to provide precise motion control. Components typically include:

- Pumps
- Cylinders
- Accumulators
- Plumbing (hoses are most common, solid piping is more durable)
- Servo control valves
- Filters
- Conduit and mounting brackets
- Pressure transducers or other control additions for position and force control, often wired to a central PLC or computer system

The CH system demands significant time to plan, including developing a detailed bill of materials, selecting the proper space/ mountings for all components, providing for position/force control, hose/wire routings plus other supporting infrastructure. The CH pump and motor typically are over-sized,

running continuously wasting energy and creating unwanted noise. The system requires a considerable amount of hydraulic fluid to be maintained, it usually has leaks with all the connections (environmental hazard) and is susceptible to fluid contamination that is detrimental to a hydraulic system.



Electro-Hydraulic Actuator Systems

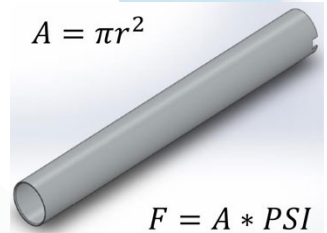
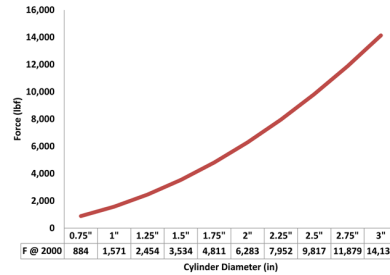
The EHA is a drop-in self-contained solution. After simple mounting and connecting the wires, the EHA system is ready to start producing. The EHA's efficient method of converting power leads to a smaller, cost-effective package. The EHA savings in costs and space are significant compared to a Central Hydraulic System. The CH system runs continuously, the EHA only runs when commanded saving on energy and noise.

The advantages of the EHA include:

- Compact and self-contained
- Only runs when needed
- EHAs do not leak
- They are very quiet and smooth
- The EHA uses standard mounting configurations, and is wired and ready for use in hours without a long installation time or extensive planning
- These self-contained units can be connected to popular network protocols including Ethernet and CANBus

EHAs use a self-contained design that is simple to set up and is very reliable. No external hoses or hydraulic infrastructure is required. The Kyntronics EHA design prevents fluid escape, making it industrially rugged and suitable for clean environments.

More Force with Less Space



On-board Pressure Sensor Provides Force Feedback

Exponential force with small increases in cylinder size. e.g. from 2.5" to 3" (20% inc) the force increases (44%)

CH vs. EHA Technology Comparison

	EHA	Central Hydraulic
High Energy Efficiency	X	
Compact – High Force Density	X	X
Quiet	X	
Modular Design – Scalable	X	X
Flexible Integration	X	
Brushless Servo Control - Precise & Repeatable	X	
Holds position without a brake	X	X
Integral force feedback	X	X
Environmentally tough	X	X
Versatile input voltages	X	
Network Integration (CAN, Ethernet, etc.)	X	
Stand-Alone Package	X	

Contact Kyntronics for any of your custom needs