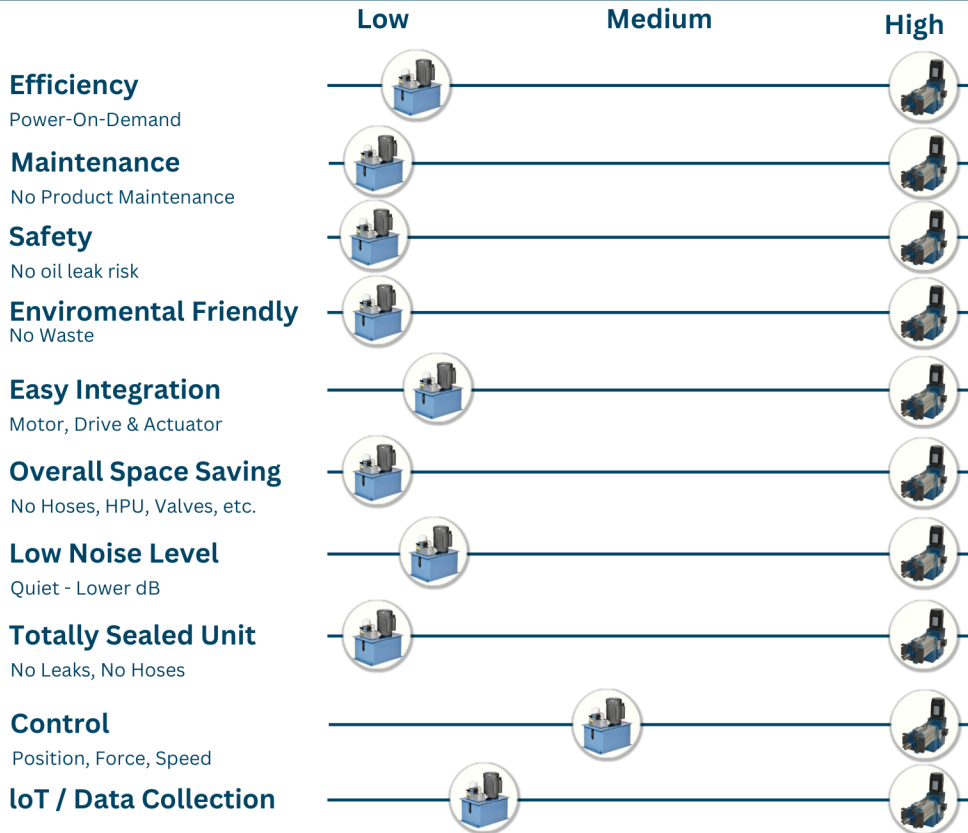




SMART Electro-Hydraulic Actuator (SHA) vs. Hydraulic Cylinder (HPUs)



Why the Kyntronics All-Electric, All-in-One SMART Electro-Hydraulic Actuator (SHA) Outperforms the Hydraulic Actuators (HPUs)

- The SHA is a totally sealed, leak free product that includes a motor, drive, and actuator.
- A power on demand set up eliminates the need to constantly run a Hydraulic Power Unit.
- SHA requires no PM other than a rod seal change (after years of use).
- Traditional hydraulic systems require regular fluid and filter changes.
- Can size a complete SHA system in a matter of minutes. Very easy to size per each application.
- The Kyntronics SHA has built in force, speed, and position control. Making it an all-electric all-in-one solution.
- Hydraulics require expensive instrumentation for IoT.

ANNUAL OPERATING COST COMPARISON

Kyntronics SMART Electro-Hydraulic Actuator (SHA) vs. Hydraulic Cylinder / HPU

Comparison Category	SHA	HPU	Assumptions / Cost Basis (April 2023)
Environmental Waste	\$0 \$0	\$33,600 \$16,000	200 Gallon HPU Tank Hydraulic Fluid Index (HFI) = 4.1 SHA is sealed - no fluid replacement or disposal is required \$42/gal X 800 gallons (4:1 HFI) \$20/gal X 800 gallons (4:1 HFI)
Energy Usage	\$1,642	\$16,429	SHA Uses Power on Demand SHA is 70% efficient (Kyntronics testing) 30 HP Hydraulic Power Unit that Runs Continuously HPU 22% is efficient (based on IFPE paper) Using \$0.17 per KWh (average US rate - Feb 2023)
Floor Space Utilization / Maintenance	\$0 \$1,760	\$2,000 \$5,250	SHA is All-In-One, no floor space required HPU requires space of 10'x10' = 100 Sq-Ft @ \$20 per sq-ft. SHA @ 1 hr/week @ Labor \$35/hr HPU @ 3 hrs/week @ Labor \$35/hr
Ergonomics / Safety	\$0	\$2,000	HPU oil leaks create hazardous conditions and safety risk SHA is totally sealed, no oil leak risk Lost days + Medical costs + Legal costs
Unplanned Downtime / Product Spoilage	\$0 \$0	\$10,000 \$10,000	SHA is totally sealed, no oil leak risk, minimal downtime risk. \$4k-\$6k average downtime costs per incident. Assuming two downtime events. 1% scrap from product contamination due to leaky connections
Annual Operating Costs	\$3,392	\$95,279	A \$91,887 Annual Savings Opportunity!

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