CLIMAX
METAL PRODUCTS COMPANY

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Keyless Locking Devices: High-Performance Shaft Locking Solutions for Data Centers

Modern data centers power everything from cloud computing to AI-driven applications, relying on robust mechanical systems to maintain precise temperature control, adequate airflow management, and environmental stability essential for continuous operations.



The KLD Advantage:

- Eliminates keys, keyways, & set screws prone to shaft damage & fretting corrosion
- Superior to splines which are susceptible to fretting & require expensive machining
- When shrink fits or press fits are difficult to install & remove
- KLDs requires only simple hand tools for installation & removal
- KLDs transmit high torque, thrust, & bending loads

Mechanical systems in data centers are put through extreme stresses due to the systems continuous operation and resultant vibrations. Traditionally, these mechanical systems have relied on keyed shaft connections which are susceptible to fretting corrosion, backlash, and wear. Over time, keyed connections become compromised, affecting equipment reliability, increased maintenance requirements, and contribute to unplanned downtime. In addition, keyed connections are limited in their ability to transmit bending moments and axial loads, restricting overall system performance.

Climax Keyless Locking Devices (KLDs) eliminate the need for traditional keyed connections while providing a shaft locking solution that is up to 30% stronger in both torsional and bending performance. KLDs proven advanced design utilizes multiple locking screws with opposing tapers creating a uniform 360° interference fit between the shaft and hub. This backlash-free connection delivers reliable torque transmission, eliminates keyway-induced stress concentrations, and helps prevent fretting corrosion. The result is improved equipment reliability, reduced maintenance, and maximized uptime for critical data center operations.

Climax KLDs are ideal for data center equipment including cooling tower drives, large HVAC fans, air handling units, pumps, backup power generation systems, and other rotating machinery where reliability and continuous operation are essential. By eliminating the shortcomings of keyed connections, KLDs help maintain precise shaft-to-hub engagement, improve system longevity, and support uninterrupted facility performance. Field serviceable, keyless locking devices can be installed and removed onsite using standard hand tools.

Climax Metal Products can tailor products to fit precise application needs. Our experienced in-house engineers are ready to work side-by-side with you, designing a custom solution that fits your exact application needs. Contact us today to discover how Climax can provide you with tailored Engineered Shaft Locking Solutions™.





