

Custom Designed Solution for Roller Coaster Lap Bar Applications

In the dynamic world of amusement park engineering, Climax Keyless Locking Devices provide design engineers with the flexibility necessary to navigate even the most challenging obstacles in the industry.



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

In today's dynamic market, the global amusement park industry stands as an economic force, with a value just shy of \$64 billion US dollars. Forecasts predict substantial growth in the years ahead, solidifying its position in the entertainment sector. The relentless appeal of whirling attractions and the delighted screams of guests spanning all ages present park owners with an excess of unique challenges to navigate. At the forefront of concerns lies the drive to craft unforgettable experiences, deliver cutting-edge attractions, and uphold the highest of standards of safety and integrity for riders.

These expectations have spurred a demand for design engineers to push the boundaries of creativity and explore unconventional manufacturing solutions. Recently, a customer presented a design challenge: the seamless integration of a lap bar onto a park ride. The original design required the machining of a specialized flange on the lap bar mounting mechanism, leading to elevated production costs and a labor-intensive assembly process. Additionally, performing regular maintenance on the ride proved to be difficult and time-consuming.

In collaboration with the manufacturer, Climax engineers identified a solution to the design challenge. By employing the use of a Climax C323-Series Keyless Locking Device to mount the lap bar directly to the ride assembly shaft, they eliminated the labor-intensive process of machining the special flange. This original solution not only simplified the machining process but also reduced assembly time, translating into significant cost and time savings. Furthermore, this solution streamlined maintenance procedures, enhancing the efficiency and longevity of the ride.

Climax KLDs feature high torque, bending, and axial thrust capacities, effectively eliminating axial movement during installation and mitigating notch factors commonly associated with keyways. In contrast to traditional methods such as sweat fit or press fit connections, Climax KLDs offer a cost-effective and time-saving alternative. In addition, installation and removal can be performed with simple hand tools, making them invaluable for field serviceability.

Carrying an extensive inventory of keyless locking devices, our in-house team of engineers will help customize a solution for your production process. Contact us today to discover how Climax can provide you with a tailored **Engineered Shaft Locking Solution™**.

