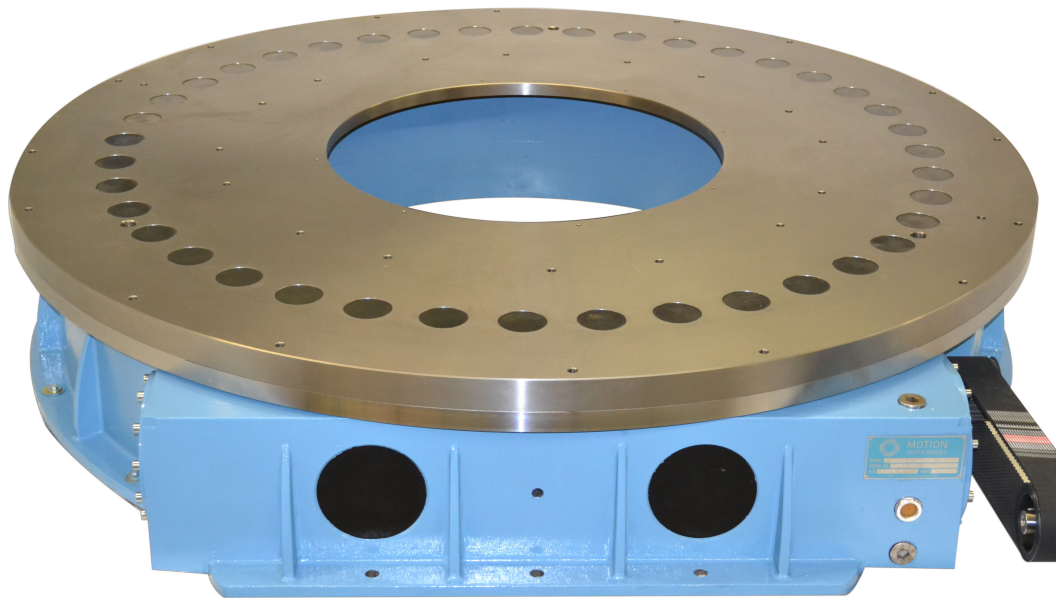




**MOTION**  
INDEX DRIVES



Revolutionizing Precision Motion Control with  
the TMF8000 Rotary Index Table:

A Showcase of Motion Index Drives' Engineering and  
Manufacturing Excellence



The TMF8000, developed by Motion Index Drives and Taktomat GmbH (MID), stands as one of the largest programmable barrel cam indexers on the market, embodying the pinnacle of precision motion control technology. This white paper delves into the engineering marvels and manufacturing prowess behind the TMF8000, emphasizing its advanced features, including the use of enhanced friction cam followers and MID's proprietary engineering techniques. The TMF8000 not only demonstrates MID's capability to push the boundaries of motion control technology but also sets a new benchmark in terms of size, precision, and flexibility in industrial applications.

## **Introduction**

In response to the industry's demand for larger, more versatile precision rotary index table solutions, MID has engineered the TMF8000—a testament to its innovative capabilities and technical expertise. This document explores the technological advancements and manufacturing strategies that underpin the TMF8000's development, highlighting its significance as a market-leading solution in the realm of programmable barrel cam indexers.

## **Engineering Excellence behind the TMF8000**

The TMF8000 represents a leap forward in programmable barrel cam rotary index table technology, attributed to MID's commitment to innovation and quality. Below are key aspects of its engineering and design process:

### **Advanced Design and Simulation**

MID utilized state-of-the-art CAD and simulation software to conceptualize and refine the TMF8000's design. This approach allowed for the optimization of the cam profile and the precise calculation of forces, ensuring unmatched accuracy and efficiency in operation.

### **Enhanced Friction Cam Followers**

Incorporating larger diameter cam follower shafts and the engagement of multiple cam followers in the barrel cam simultaneously, the TMF8000 benefits from increased load-bearing capacity and minimized wear, enhancing both precision and durability.

### **Custom Engineering Solutions**

The TMF8000's development involved custom-engineered solutions to meet the challenges of its size and complexity. MID's engineers designed specialized tooling and fixtures to facilitate the precise machining and assembly of its components, ensuring that every aspect of the indexer meets MID's rigorous standards.

## Manufacturing Mastery of the TMF8000

The production of the TMF8000 showcases MID's manufacturing excellence, highlighted by the following:

### Precision Machining

Utilizing advanced CNC technology, MID achieved the high precision machining required for the TMF8000's large components. This ensures that all parts meet strict tolerances, crucial for the system's overall performance and reliability.

### Quality Control and Testing

MID implemented rigorous quality control measures throughout the manufacturing process of the TMF8000. Each component underwent extensive testing to verify its precision and durability, ensuring that the final product exceeds industry standards.

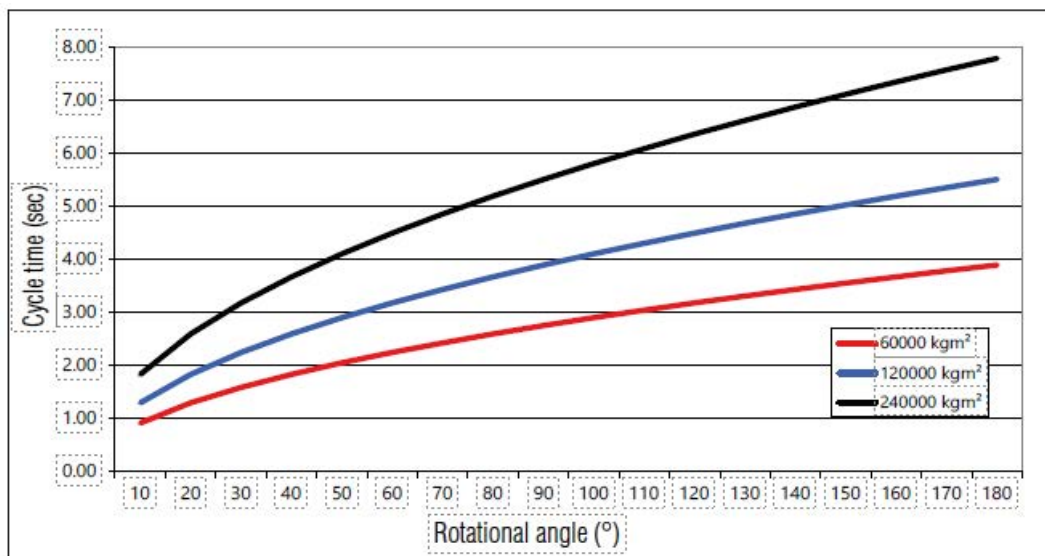
### Innovative Assembly Techniques

Given its size, assembling the TMF8000 posed unique challenges. MID's skilled technicians employed innovative assembly techniques, carefully orchestrating each step to maintain the integrity and alignment of the system, demonstrating a commitment to excellence at every stage of production.

### Comparative Advantages of the TMF8000

The TMF8000 sets itself apart from the competition through:

- **Unmatched Size and Capacity:** It is one of the largest programmable barrel cam rotary index tables available, capable of handling loads of 16 meters in diameter and rotating mass moment of inertia loads well over 300,000 kgm<sup>2</sup>



- **Superior Precision and Flexibility:** Thanks to its advanced engineering and enhanced friction cam followers, the TMF8000 offers exceptional precision of +/- 6 arc seconds and can be easily programmed to meet diverse application needs.
- **Durability and Reliability:** The robust design and manufacturing quality ensure that the TMF8000 operates reliably under the most demanding conditions.

## Applications

The versatility and capacity of the TMF8000 make it ideal for a wide range of industrial applications, including automotive assembly, aerospace component manufacturing, and other sectors requiring large-scale, precise motion control solutions.



## **Future Directions**

MID continues to innovate, with plans to further enhance the TMF8000's capabilities and explore new applications for its technology. Ongoing investments in research and development, along with a focus on smart technologies and IoT integration, promise to elevate the TMF8000's performance and utility even further.

## **Conclusion**

The TMF8000 programmable barrel cam rotary index table represents a milestone in motion control technology, showcasing Motion Index Drives' engineering and manufacturing expertise. Its development underscores MID's position as a leader in the industry, capable of delivering advanced solutions that meet the evolving needs of modern manufacturing and assembly processes. The TMF8000 not only exemplifies MID's commitment to innovation and quality but also sets a new standard for precision, capacity, and versatility in the motion control market.

This white paper has highlighted the exceptional engineering and manufacturing achievements of Motion Index Drives in creating the TMF8000, emphasizing its significant advantages and potential to transform industrial applications. As MID continues to push the boundaries of technology and innovation, the TMF8000 stands as a testament to what is possible in the realm of precision motion control.

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