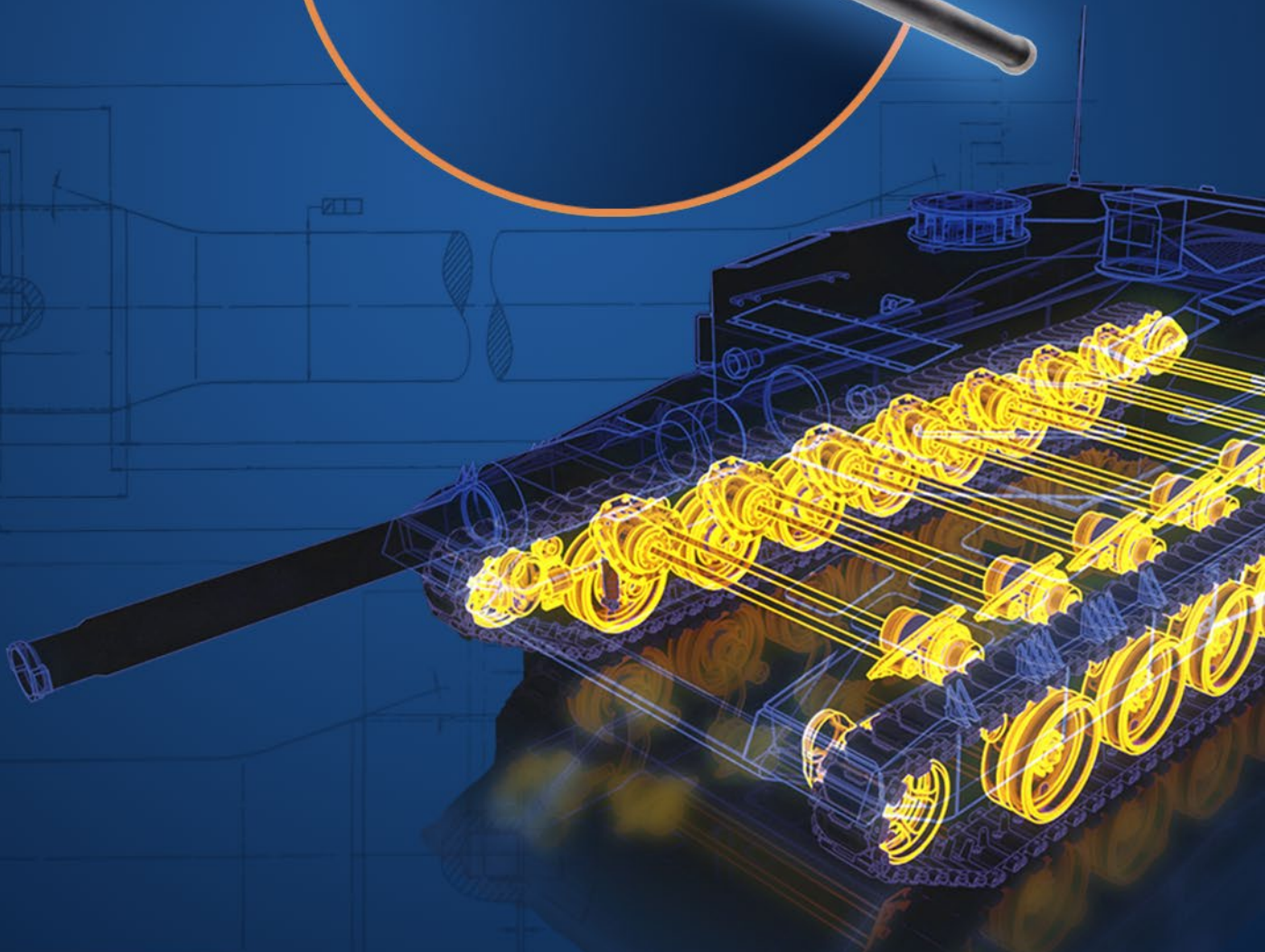




**MENATEK**  
Defense Technologies



# ***TORSTON BAR***



*PRECISION ENGINEERING  
ENHANCED PERFORMANCE*

# ***TORSION BAR***

*PRECISION ENGINEERING  
ENHANCED PERFORMANCE*



# MENATEK

Defense Technologies



Founded in 1995, Istanbul



**2,200 m<sup>2</sup>** total area



**Dynamic and proficient team**

100 Employees > 60 Engineers



**30 years** of industry experience



Export to **40+ countries**

International presence



**Major clients**

US Army, Turkish Army, NATO Units & Global OEMs



**Prime Contractor**

The only Turkish company working with the US Government since 2006



Operations comply with NATO standards

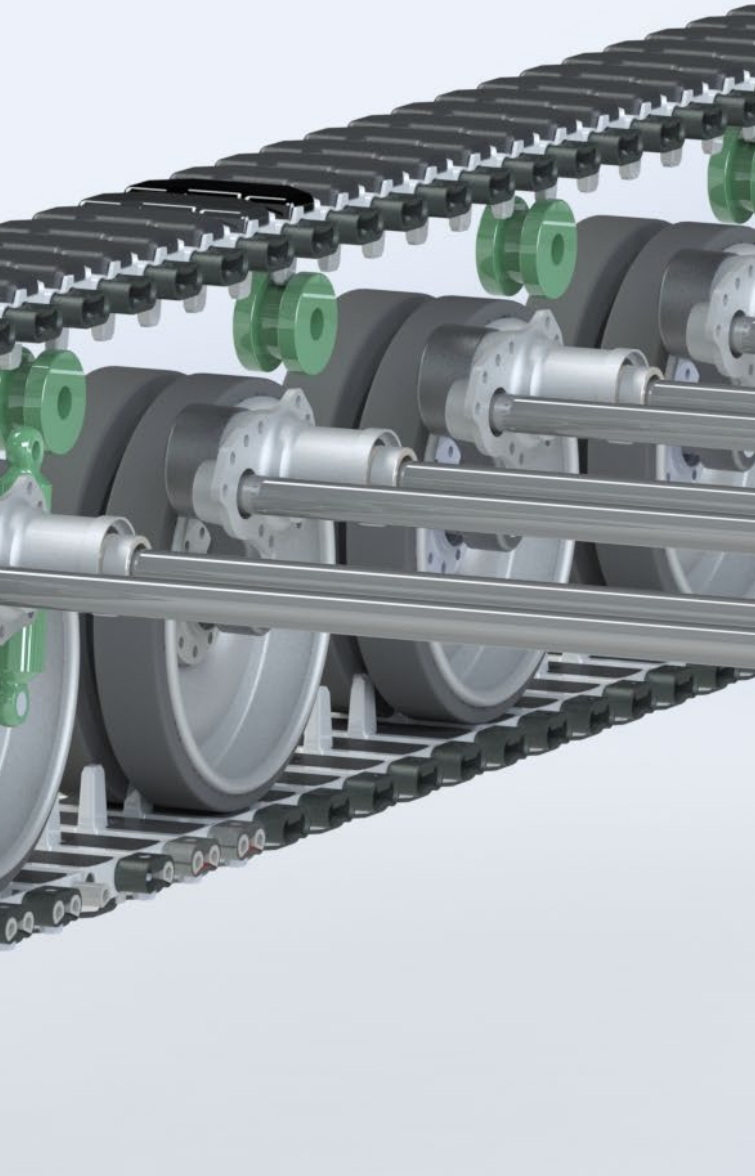


**Solution partner**

with comprehensive capabilities

At MENATEK Defense Technologies, we pride ourselves on being at the forefront of innovation in the defense industry. With a rich history of excellence, we specialize in the design, production, and supply of high-performance mechanical sub-systems.

Our mission is to deliver cutting-edge solutions that meet the rigorous demands of modern defense applications. From concept to production, MENATEK combines advanced engineering expertise with state-of-the-art manufacturing processes to ensure our products exceed industry standards.



PRECISION  
ENGINEERING  
ENHANCED  
PERFORMANCE

About  
**TORSION BAR**

**Torsion bars** are a testament to mechanical ingenuity and engineering excellence. They act as **energy accumulators** for almost all military tracked vehicles, carrying them through the battlefield in every situation for thousands of kilometers. A bar in production may go through **10+ processes** including multiple heat treatments, forging, machining, shot peening, and surface treatments.

Our  
**Differentiation**

Different military doctrines require various equipment, leading to variations in tracked vehicle weights. Consequently, specialized suspension springs are required to achieve advanced mobility. **MENATEK excels in delivering customized torsion bars that are meticulously tailored to meet the specific requirements of each vehicle.**

# TORSION BAR

## The Journey of Innovation & Excellence

### Birth

#### First Torsion Bar

Localizing the Torsion bars for the Turkish Armed Forces' APC tanks.

Investment in manual preset and test bench

### Growth

#### First Export

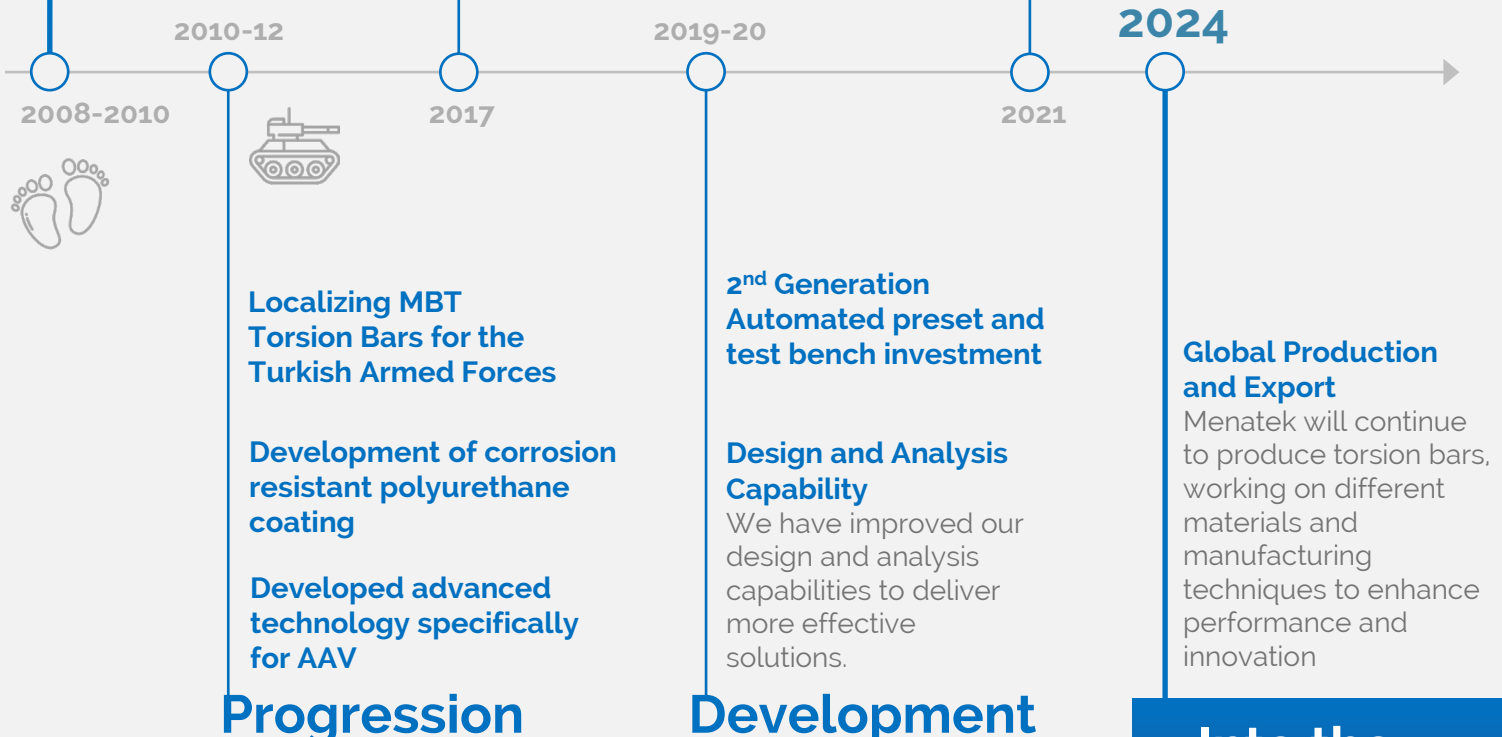
We have successfully exported torsion bars for AAV (Amphibious Assault Vehicles) and IFV (Infantry Fighting Vehicles).

1<sup>st</sup> Generation Automated preset and test bench investment

### Development

Development of specially designed annealing and QT (Quench and Temper)

We have also produced torsion bars for ARV and 4x4 vehicles.



Into the Future

# Technical Specification

## Materials Used

MENATEK uses various types of **ESR and VAR steel alloys** to manufacture torsion bars, ensuring they meet performance requirements.

## Dimensions

80 mm	1000-2800 mm
Diameter	Length

## Vehicle Types

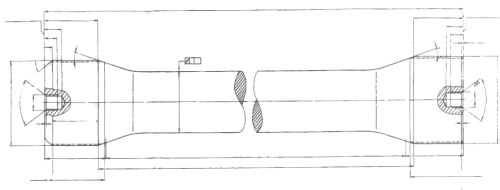
MENATEK manufactures torsion bars for a variety of vehicles, including **Main Battle Tanks (MBT), Infantry Fighting Vehicles (IFV), Armored Personnel Carriers (APC), Amphibious Assault Vehicles (AAV), Armored Recovery Vehicles (ARV)** and all other tracked as well as wheeled vehicles.

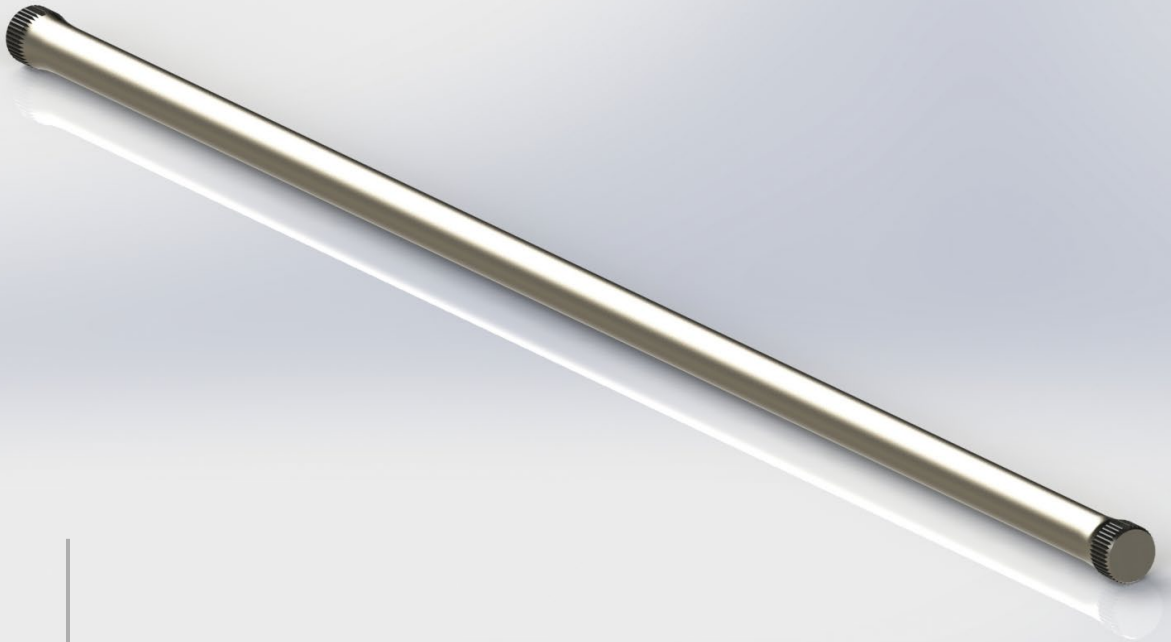
## Endurance

MENATEK's torsion bars undergo precisely controlled manufacturing processes, including **shot peening, heat treatment, surface finishing, and presetting**. As a result, our high-stiffness torsion bars achieve life cycles of more than 100,000 at full wind-up angle.

## Coating

MENATEK utilizes **tape wrapping and PU coating** to provide physical protection to the body of each torsion bar. PU coating offers superior protection against physical impacts and corrosion, ensuring long-lasting durability.





## Mechanical **I n g e n u i t y**

Acts as an energy accumulator for tanks and military vehicles.



## Custom **D e s i g n**

Tailored torsion bars for different vehicle needs.



## Comprehensive **P r o d u c t i o n**

Involves multiple heat treatments, forging, machining etc.



## Tested and **A p p r o v e d**

Complete service including fatigue testing and manufacturing.

# Why you should choose ***TORSION BAR***

## **Superior Quality**

Manufactured with premium materials and advanced production methods, these torsion bars guarantee exceptional durability and performance under the toughest conditions.

## **Rapid Delivery**

With our efficient production processes and smooth operations, we ensure quick delivery times without compromising quality. Our torsion bars are ready when you need them.

## **Budget Friendly**

Our torsion bars offer exceptional value, combining high performance with competitive pricing. By optimizing our production methods, we deliver quality without breaking your budget.



# Tailored Solutions

We offer customized torsion bars to meet the unique needs of different military vehicles. Our expertise enables us to design and produce solutions that perfectly match your requirements.

# Reliable Performance

Our torsion bars have undergone field tests and are proven to perform reliably in the toughest conditions. Trusted by armed forces worldwide, they provide consistent and dependable performance.

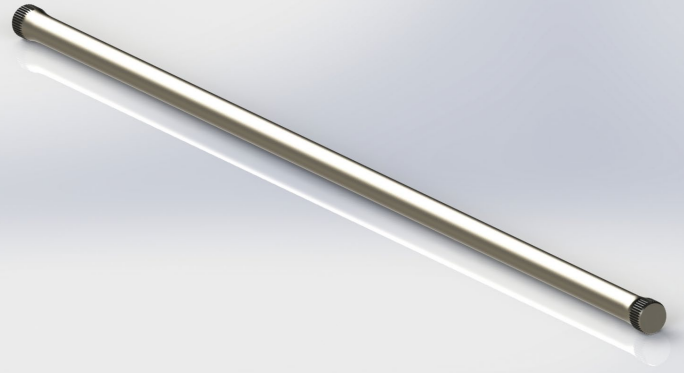
# Extensive Testing

Torsion bars each heat load go through extensive testing, including assessments on our torsion bar cycle test machine to ensure they meet the highest standards of quality and durability. Our commitment to rigorous testing guarantees reliable performance in every mission.

# Professional Assistance

Our experienced team is dedicated to providing exceptional customer support, helping to find the right solutions for their specific needs and challenges. From material selection to integration, we're here to assist every step of the way.

# Application Areas



**MILITARY**



**HEAVY DUTY**



**RAILWAY**



**AUTOMOTIVE**

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