

The New Reality of Defense Supply Chains: From Supplier to Strategic Partner

As NATO leaders convene in Ankara in July 2026 to discuss the future of the alliance, this time factory floors have joined the table alongside maps and budgets. A truth that has grown impossible to ignore since the outbreak of the Russia-Ukraine war is this: military capability is often exhausted not at the front line, but at the narrowest point of the supply chain. Aerospace and defense supply chain disruptions have surged by more than a third in recent years, with lead times that once stretched over weeks now extending to months, and for certain critical components, to years. At the very center of these delays sits the part that drives rotating turret systems, radar mounts, and remote weapon stations: large-diameter slewing rings and bearings.

Having manufactured in this field for 56 years, **Tibet Makina** reads this picture not as an outside observer, but as an active player at the center of the sector.

Capacity Shortage, Strategic Opportunity

Europe's precision manufacturing capacity has in recent years been pulled simultaneously by two powerful forces. On one side, growing ammunition orders driven by rearmament programs; on the other, the massive slewing ring demand of the wind energy sector targeting turbines of 15 MW and beyond. Both applications require the same metallurgy, the same heavy turning capacity, the same heat treatment infrastructure. Under this competitive pressure, delivery timelines on the defense side were affected, and the pace

of rearmament proceeded slower than anticipated due to bottlenecks in component procurement.

The problem quickly escalated to the alliance's highest policy level. NATO's Defense-Critical Supply Chain Security Roadmap, adopted in June 2024, established the creation of multinational supply alternatives for critical components, including cast steel, titanium, and specialized alloy bearings, as an integral part of alliance strategy. Around the same time, the European Union's defense industrial strategy set the target of sourcing a significant share of defense procurement from allied nations by 2030. The message was clear: find a reliable, scalable manufacturing partner in close geography.

"The selection of the right supplier and reliable supply chain management are among the most sensitive issues for manufacturers. The pandemic process and regional tensions in particular exposed the fragilities in supply chains in clear terms. This is not an operational decision; it is a strategic risk. The way to mitigate this risk lies in moving away from dependency on a single source and toward multiple, proven partnership structures."

Şölen EGEMEN,
Chairman of the Board

Scale and Precision, Under One Roof

What **Tibet Makina** brings to this equation is not a single product or the capacity of a

single machine. Slewing ring gear and bearing production across a diameter range from Ø100 mm to Ø4500 mm, a modern machine park, qualified measurement equipment at every process stage, and in-house heat treatment and coating operations, including hard anodizing, manganese phosphate, and thermal zinc spray, all come together under a single roof. The consolidation of every step from design through prototype validation testing within a single facility represents a level of integration that is rare among mid-sized European manufacturers and found in very few companies in Türkiye.

The quietest yet most compelling evidence of this integration stands in the field. Gears that have been operating continuously for more than 56 years across different sectors serve as living references demonstrating not only the quality at the design and manufacturing stage, but the lifetime field performance of the products. Nearly 30 years of active field experience in the **defense industry** reflects the company's engineering competence and the reliability and global reputation its products have earned.

Perhaps the most critical component in the product portfolio from a defense perspective is wire-race bearing technology. Compared to classical steel slewing ring systems, aluminum wire-race bearings offer a structure approximately 60 per cent lighter at the same cross-section. The implications are felt directly in the field: a lighter turret means more armor or a larger ammunition capacity. The low thermal conductivity of

the structure reduces the infrared signature of the rotating turret, while the capacity to absorb shock loads and vibration directly enhances system reliability under combat conditions.

Tibet Makina is one of a small number of manufacturers with not only the production capability in this technology but the engineering competence to design its own solutions.

From Build-to-Print to Build-to-Spec

Tier-1 partnership status in the defense supply chain is no longer measured by technical capacity alone, but by engineering integration competence. Leading defense prime contractors are moving away from the model of completing component design internally and then placing an order with a machine shop. An approach that involves the supplier from the earliest conceptual design stage of turret and radar mounts, running load distribution and shock resistance simulations jointly through finite element analysis, is becoming the standard.

Tibet Makina stands as a company that has completed this transition. Design processes conducted in CAD environments, static and dynamic FEA analyses, and in-house CMM verification position the company not as a component vendor but as an engineering partner. Strategic partner status with Aselsan and ongoing collaborations with other leading prime contractors in the sector demonstrate this positioning in the field. The registered Design Centre forms the institutional foundation of this entire process.

"We are one of a small number of companies in the world holding our own license and patent in slewing bearings and gears. This is not a brand claim; it is the distinction that sets us apart from other manufacturers as a partner in engineering decisions."

Tibet ARBAK, Vice
Chairman of the Board
& General Manager

NATO Alignment and Certification

The supplier approval processes of leading defense prime contractors span multiple layers. ISO 9001, ISO 14001, ISO 45001, and ISO 27001 certifications form **Tibet Makina's** current quality framework. The company's standing in the EcoVadis sustainability assessment meets the environmental and social governance criteria that major defense manufacturers now require as standard.

The AS9100 certification process has been completed successfully. This step demonstrates the institutional adoption of the quality management framework that serves as the standard entry point for aerospace and defence supply chains.

When viewed against Türkiye's NATO **defense industry** track record, the logic of these steps becomes clearer. A production history spanning from fuselage components of the A400M military transport aircraft to numerous international platforms proved years ago that Turkish industry is aligned with NATO standards and possesses scalable, reliable supply capacity. The Ankara Summit presents a



Tibet ARBAK- Vice Chairman Şölen EGEMEN -
Chairman of the Executive Board

natural platform for converting this deep-rooted alignment into a current strategic partnership.

The Next Step: Strategic Partnership

In NATO's agenda, the concept of "burden-sharing" is progressively giving way to "burden-delivery", not spending figures, but real manufacturing output and the resilience of the supply chain. This shift redefines the value of a company established in an allied

nation, holding deep engineering infrastructure and proven capacity in large-diameter rotating component production. What is decisive here is not capacity alone, but the supply reliability that stands behind it.

"There is one thing we believe in: the engineering capability, manufacturing strength, and vision of this country will carry far greater weight in the world of tomorrow. And we will continue to move forward, with determination, as part of this story."

Şölen EGEMEN,
Chairman of the
Board

Tibet Makina will soon bring to the sector the next-generation solutions it has developed based on current necessities. For prime contractors in the defense and aerospace industry seeking original solutions to niche engineering challenges, this is the right address for collaboration.



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