



# Maximum Mission Capability. Superior Protection.

Schunk Defense areas of expertise

## Materials engineering

Carbon | Graphite |  
Fiber composites | Ceramics |  
Metal powder injection moulding |  
Quartz

We are  
leader in

#1

## Machine building

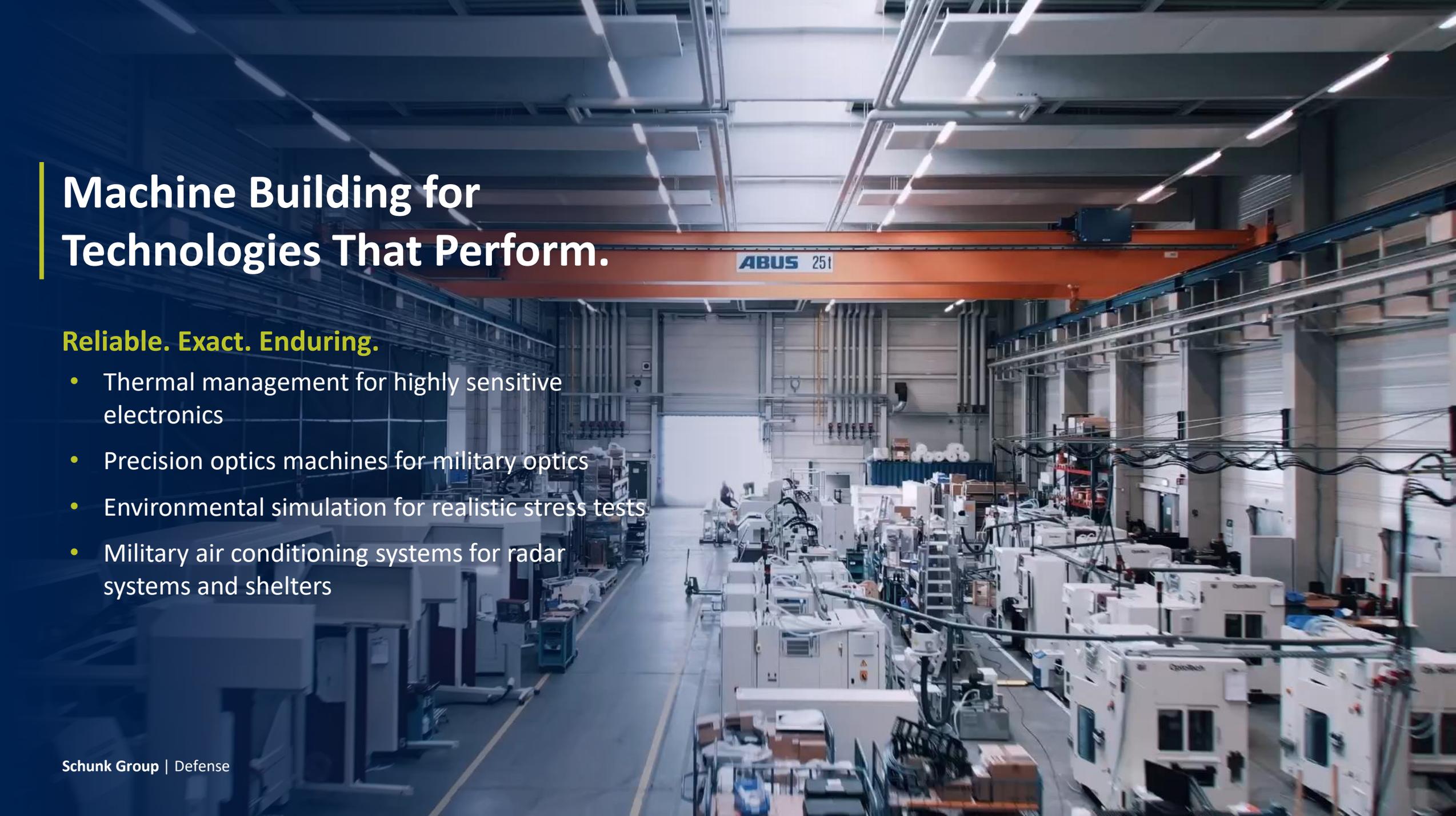
Environmental simulation | Industrial ovens  
| Air conditioning | Clean room technology |  
Ultrasonic metal welding | Optical machines  
| Laser processing



## Advanced Materials for Critical Defense Roles

### Indispensable. Flexible. Proven.

- Technical ceramics for ballistic protection
- Carbon, fibre composites and metal powder injection moulding for high-performance components such as drive systems



# Machine Building for Technologies That Perform.

## Reliable. Exact. Enduring.

- Thermal management for highly sensitive electronics
- Precision optics machines for military optics
- Environmental simulation for realistic stress tests
- Military air conditioning systems for radar systems and shelters

# Schunk as a technology leader

## Unique innovations



**3D printed Sic/B4C ceramics**  
with maximum protection at  
minimum weight



World leader in **environmental simulation systems** for realistic testing under the most extreme conditions up to space simulation



Machinery for **laser drilling** of ignition channels for maximum productivity and minimal rejection rates

# Schunk as a strategic partner

## From development to mass production

### 1 Development

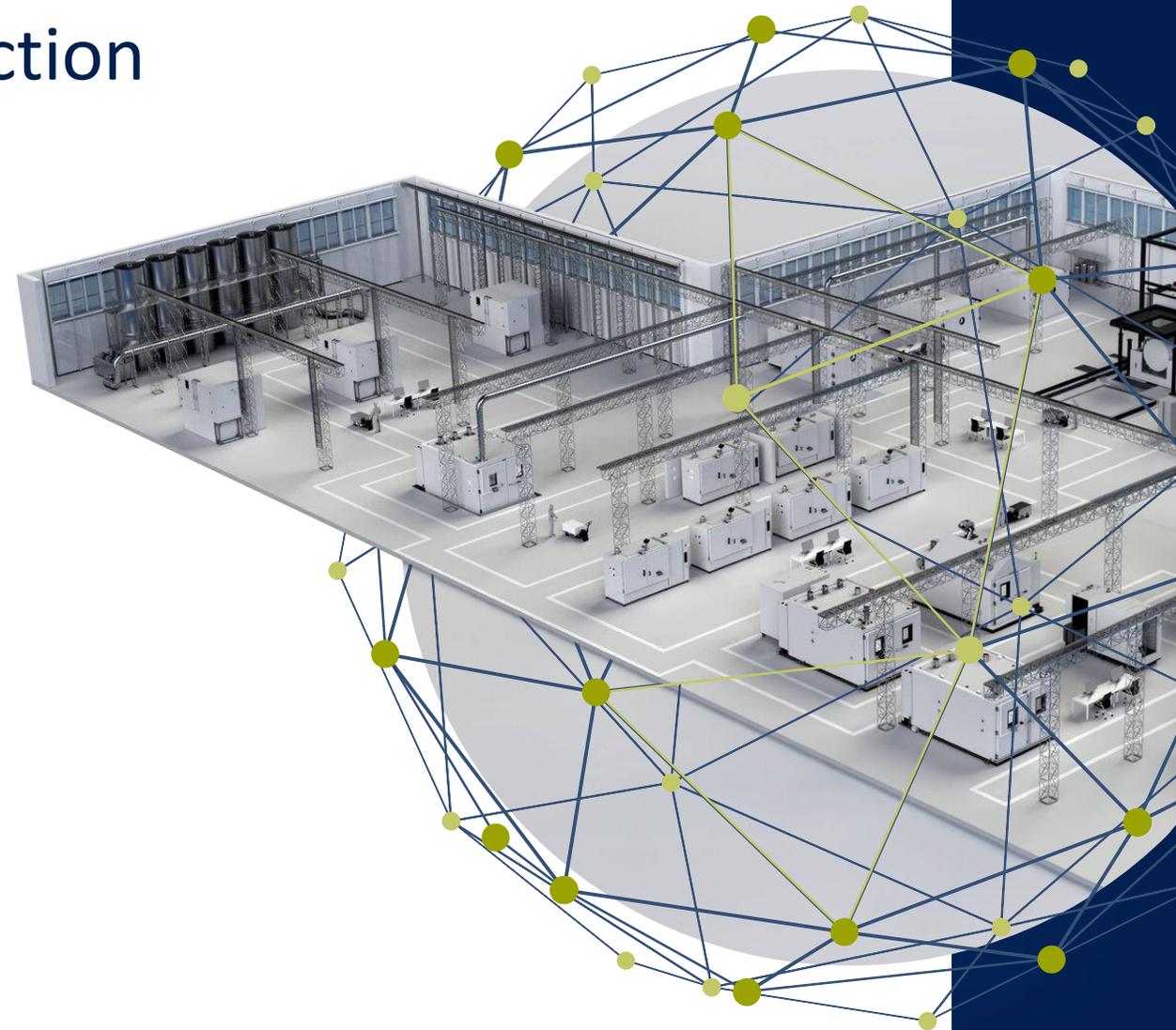
In-depth technical expertise accelerates prototyping and production

### 2 Small series

Fully integrated European value chain guarantees scalability

### 3 Large series

Maximum reliability for large production volumes





# Our Key Figures

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**26**

Countries

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**64**

Locations worldwide

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**10,400+**

Employees

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**1.8** B €

Turnover in 2024

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**162** M €

Investments in 2024

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**69%**

Equity ratio

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**∞**

Active in all industries

# 100+ years



Long-term  
**investments**  
without short-term  
profit targets



Decades of **reliable**  
**planning** for military  
procurement



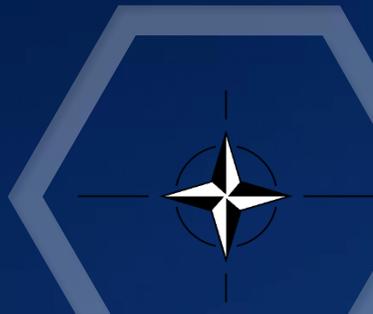
Guaranteed **security of**  
**supply** over the entire  
product life cycle

# Uncompromised Supply Security.

## Immune to Geopolitical Disruptions.

- Production in Germany and entirely European supply chains
- Complete independence from suppliers from China or the USA
- Reliable spare parts supply and maintenance over the entire product lifecycle





**Certified Quality**



—  
NATO-, MIL-, DIN- Standards fulfilled

—  
Integral Component of leading military technologies and platforms

## **For the highest military requirements**

—  
Over 1 Million delivered ballistic protection plates

—  
Partner of leading NATO armies such as DE, FR, ES, USA

# Materials that push boundaries

**Designed for military systems – from hypersonic propulsion to lightweight UAV structures.**

**Our carbon and composite materials are**

- Heat-resistant up to over 3000 °C
- Extremely mechanically resilient
- Lightweight and dimensionally stable
- Radar-transparent and EMC-compatible

**For greater range, less wear and higher system reliability.**

# Carbon solutions in the application

**Customized solutions for modern guided weapons and unmanned systems.**

- Nozzles & combustion chambers – for extreme temperature zones
- Tail units & housings - for stable trajectories with minimum weight
- Radomes & mounts - for sensor technology without loss of signature
- UAV components - for maneuverability and payload





# Success in practice

Over 15 years of supplying heat-resistant composite components for a European missile program

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**Rocket nozzles**  
for thermal load capacity up  
to over 2,000 °C

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For mechanical stability at  
extreme pressure at up to 4  
times the speed of sound

# Ceramic Body Armor Plates – Lighter, Safer, Seamless.

Schunk is the world's leading supplier of high-performance SiC/B4C ceramic plates for military body protection.

- Ultra-lightweight solutions for soldiers
- Meet highest NATO and MIL protection standards
- Proven in use by armed forces worldwide
- Greater mobility, longer wear times, enhanced operational safety
- 3D-printed SiC/B4C plates without ballistic weak points
- Fully automated and state-of-the-art production and global quality assurance



# Advanced Ceramic Protection for Crews in Cockpits and Combat Vehicles

Schunk develops ultra-lightweight protection solutions for seats in military platforms.

- 3D-printed SiC/B4C plates for integrated seat or hull protection of helicopters
- No weak points thanks to monolithic construction
- Maximum weight savings for airborne and ground-based systems
- Optimized for narrow cabins and ergonomic seating systems
- Protection against armor-piercing rounds, even under multiple impacts





# Space Precision

Schunk supplies high-performance SiC components for military space-based reconnaissance, communication, and navigation.

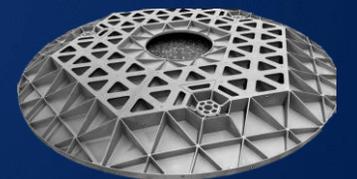
**Up to 30% lighter**  
thanks to bionic  
structures

**Best image quality & SAR  
data** through maximum  
stiffness

**Temperature resistant:**  
low expansion, high  
thermal conductivity

**Precise**  
reconnaissance and  
terrain mapping data

**Complete process chain**  
from blank to optical  
coating



# Efficient. Robust. Scalable. MIM Components for Firearms

## Components for long and short firearms

- **Dimensional accuracy** without post-processing
- **Complex geometries** (e.g. locking lugs, cavities)
- **Excellent mechanical properties** after heat treatment
- **Series cost-efficiency** for medium to high production volumes
- **Variety of materials** (case-hardened steel, martensitic stainless steel, stainless steel)



Example of a MIM Component.

# Precision Drilling

Ultra-short pulse laser for efficient drilling of flash ignition channels in 9mm cartridge cases.

- Ultra-short pulse laser replaces conventional punching
- High productivity: over 300,000 cartridge cases per day
- 100% inline inspection & automatic defect detection
- Minimal rejection rate & highest process reliability
- Maximal system availability – operational 24/7



# Optical Precision

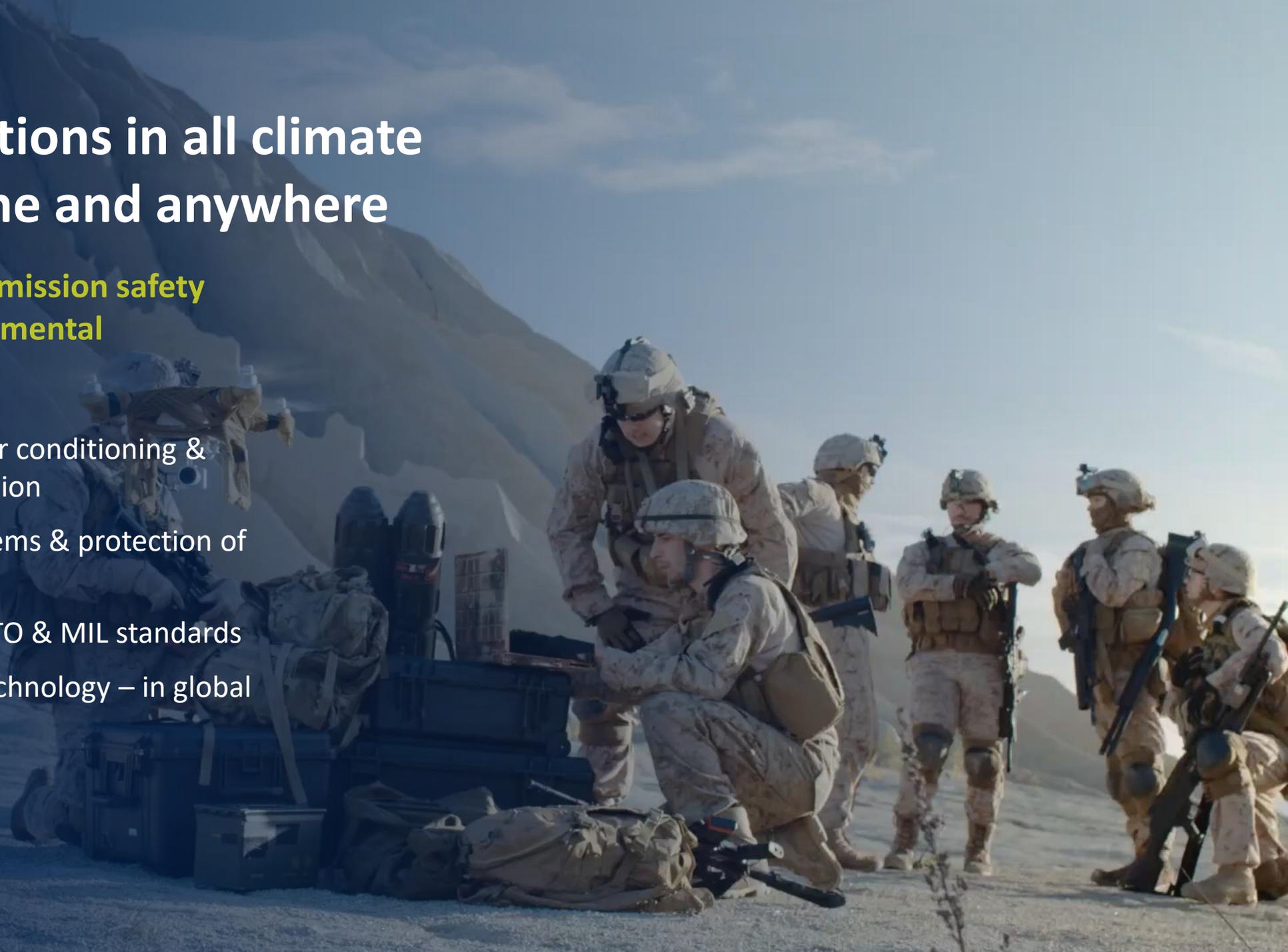
**OptoTech – Machines for the high-precision manufacturing of optical components for military applications.**

- **Maximum precision:** Innovative manufacturing technologies ensure the highest imaging quality in applications such as sensor systems, reconnaissance, and target acquisition – for greater safety through improved visibility
- **Protection of critical systems:** Rugged optics protect sensors and cameras in extreme operating environments
- **Seamless platform integration:** Tailored manufacturing solutions for optics in vehicles and aircraft, drones, tanks, missiles, and optics in HMDs and HUDs

# Military operations in all climate zones – anytime and anywhere

**Weiss Technik enables mission safety under extreme environmental conditions.**

- Specialist in military air conditioning & environmental simulation
- Safe operation of systems & protection of personnel in the field
- Meets the highest NATO & MIL standards
- Proven and reliable technology – in global missions for decades



# Electronics cooling without compromise – for mobile & stationary operations

Proven air conditioning and liquid cooling solutions for containers, command posts, and electronics.

- Mobile HVAC for tents, containers, medical units, and command centers
- Liquid cooling for radar, IT, and electronic systems
- Reliable in extreme temperature ranges from  $-36^{\circ}\text{C}$  to over  $+60^{\circ}\text{C}$
- Energy-efficient & field-proven





# Extreme Condition Testing

Customized environmental simulation for vehicles, UAVs, aircraft, and ammunition.

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**Climate chambers**  
for vehicles, aircraft,  
and UAVs

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**All conditions:**  
temperature,  
humidity, sunlight,  
vibration, dust, shock,  
and corrosion

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**Realistic testing** for  
mission-critical  
systems



# Schunk Group

#passionfortechonology

