OPTIMAS INTERNATIONAL

MAKING EVERY CONNECTION COUNT

FASTENING SOLUTIONS FOR:

Semiconductor Capital Equipment



Precision-engineered components for vacuum, thermal, chemical and contamination-sensitive environments.



collaborate@optimas.com

Introduction

As semiconductor OEMs and subsystem suppliers push the limits of advanced-node manufacturing, standard fasteners are being replaced by specialised components engineered for demanding process environments.

Across wafer fabrication, advanced packaging, assembly and test, materials and solutions must deliver ultra-low outgassing, corrosion resistance, electrostatic control, thermal stability and low particle generation.

Optimas International brings decades of engineered fastening expertise to semiconductor capital equipment applications, supporting customers with integrated component solutions across process tools, vacuum chambers and critical subsystems.

> **Our clean-certified fasteners enable dust-free semiconductor production by delivering the industry's lowest particle and contamination levels.**



A Trusted Partner

7,000+	SKUs
100+	Supply partners
5,000+	Cleanroom compliant SKUs

We bring decades of engineered fastening expertise to semiconductor capital equipment applications, supporting customers with integrated component solutions.

By combining application knowledge, local engineering support and global supply capabilities, we help simplify sourcing, reduce part complexity and support consistent product performance.

Cleanliness Capabilities

- **Ultra-Clean Process**
  Precision washing removes particles, oils and residues to semiconductor-grade levels.
- **Low Particle and Metal Contamination**
  Meets or exceeds SEMI standards for fasteners used in critical vacuum environments.
- **Cleanroom Packaging**
  Each fastener can be sealed in ISO 5 (Class 100) cleanroom bags, ready for installation.
- **Vacuum-Compatible**
  Designed to prevent virtual leaks and minimise outgassing for stable vacuum performance.

Case Study

We helped a leading fluid and gas delivery system manufacturer in APAC achieve a comprehensive supply chain and inventory management solution.

450+	SKUs
28.2M	Parts shipped 2022-2025
78+	Suppliers managed

Semiconductor Capital Equipment We Support

Wafer Fabrication

- Oxidation and Diffusion Equipment
- Thermal Processing Equipment
- Film Deposition Equipment
- Lithography Equipment
- Track Systems
- Etching Equipment
- Ion Implantation Equipment
- Wet Process and Cleaning Equipment
- Chemical Mechanical Planarisation Equipment
- Metrology Equipment
- Inspection Equipment
- Wafer Handling and Automation Systems

Advanced Packaging

- Wafer Bonding Equipment
- Die Attach Equipment
- Flip-Chip Bonding Equipment
- Wire Bonding Equipment
- Encapsulation and Moulding Equipment

Assembly and Test

- Dicing and Singulation Equipment
- Burn-In Equipment
- Semiconductor Test Equipment
- Packaging Equipment



Product Categories Overview

Our product range is engineered for semiconductor capital equipment, where vacuum compatibility, thermal stability and contamination control are critical. Components are specified to deliver low outgassing, chemical resistance, electrostatic control and consistent performance in cleanroom environments.

- Vented screws for vacuum applications
- Anti-static fasteners for ESD-sensitive environments
- Non-magnetic fasteners for beamline, optical and inspection stability
- Corrosion-resistant alloy fasteners for aggressive chemicals
- Vacuum-compatible fasteners with low outgassing characteristics
- Speciality-coated fasteners for galling prevention and wear reduction
- Custom-engineered micro fasteners for high-precision assemblies
- Precision materials including stainless steel, titanium, Inconel®, Hastelloy® and high-performance polymers











Vacuum and Vented Fasteners

Vented fasteners and washers let trapped air escape from blind holes and threads, helping to avoid virtual leaks in vacuum chambers.

- **Vented Socket Head Cap Screws**
  316L stainless steel, titanium
- **Vented Socket Set Screws**
  316L stainless steel
- **Vented Shoulder Screws**
  316L stainless steel
- **Washers with Vented Slot**
  304 stainless steel
- **Vented A286 Screws**
  A286 stainless steel
- **Ceramic Screws with Cover Cap**
  Ceramic
- **Surface-Hardened Screws**
  Stainless steel, hardened surface
- **MoS_2-Coated Screws**
  Stainless steel, MoS_2 dry-film lubricant
- **WS_2-Coated Screws**
  Stainless steel, WS_2 dry-film lubricant
- **Silver-Plated Stainless Steel Screws**
  Stainless steel, silver-plated
- **Silver-Plated Copper Screws**
  Copper, silver-plated
- **Anti-Galling Coated Screws**
  Stainless steel, clean-compatible coating









Heat and Corrosion-Resistant Alloys

Alloys and assemblies chosen to hold clamp load and resist oxidation and chemical attack at process temperatures.

- A286 Stainless Steel Screws
  A286 stainless steel
- 316L Stainless Steel Screws
  316L stainless steel
- Passivated 316L Stainless Steel Screws
  316L, passivated
- 304 Stainless Steel Screws
  304 stainless steel
- 310 / 330 Stainless Steel Screws
  Austenitic stainless steel
- 17-4 PH Stainless Steel Screws
  Precipitation-hardening stainless steel
- Inconel® Screws
  Nickel alloy
- Inconel® 718 Screws
  Nickel alloy
- Hastelloy® Screws
  Nickel alloy
- MAT21® Screws
  Nickel alloy
- High-Temperature Alloy Shoulder Screws
  A286 / nickel alloy
- Tungsten Screws
  Tungsten
- Screw and Plain Washer Assemblies
  316L stainless steel
- Screw, Spring Lock and Plain Washer Assemblies
  316L stainless steel









Titanium, Lightweight and Non-Magnetic

Titanium and other lightweight or non-magnetic materials for precision and magnetically sensitive equipment.

- **Titanium Hex Nuts**
  Titanium
- **Titanium Button Head Screws**
  Titanium
- **Titanium Socket Head Cap Screws**
  Titanium
- **Titanium Reduced-Shank Screws**
  Titanium
- **Titanium Micro Screws**
  Titanium
- **Titanium Precision Screws**
  Titanium
- **Non-Magnetic Stainless Steel Screws**
  Stainless steel
- **Anodised Aluminium Screws**
  Aluminium
- **Black Stainless Steel Screws**
  Stainless steel
- **Low-Temperature Black Chrome-Treated Screws**
  Stainless steel, black chrome finish









Precision Parts and Assembly

Precision part types and service options for compact, repeatable assemblies in cleanroom environments.

- **Precision Shoulder Screws**
  316L stainless steel
- **Low-Profile Socket Head Screws**
  316L stainless steel
- **Countersunk Low-Head Screws**
  316L stainless steel
- **Micro Screws**
  Stainless steel and titanium
- **Captive Panel Screws**
  Retained when undone
- **SEMS Screws**
  Pre-assembled screw and washer
- **Flat Washers**
  304 stainless steel
- **Mixed Screw, Nut and Washer Sets**
  Titanium and 304 stainless steel
- **Locking Screws**
  Resist loosening under vibration and thermal cycling
- **High-Strength Socket Head Cap Screws**
  Higher clamp load in compact joints
- **Wear-Resistant Coated Screws**
  Reduces wear across repeated assembly









Polymers, Ceramics and Speciality Materials

Polymers, ceramics and speciality metals for chemical resistance, electrical insulation and static control.

- **PEEK Screws**
  Polymer
- **Anti-Static PEEK Screws**
  Polymer
- **ESD-Safe Polymer Screws**
  Polymer
- **PTFE Screws and Nuts**
  Polymer
- **PVDF Screws**
  Polymer
- **PFA Screws**
  Polymer
- **PPS Screws**
  Polymer
- **PEI Screws**
  Polymer
- **Polyimide Screws**
  Polymer
- **Ceramic Screws**
  Ceramic
- **Brass Hex Nuts**
  Brass
- **Phosphor Bronze Screws**
  Phosphor bronze









About Us



Optimas International is a tech-enabled industrial distributor providing fasteners, components, inventory management and supply chain solutions across APAC and EMEA.



Partnering with domestic and global manufacturers, the company delivers bespoke, engineering-led and technology-enabled programmes designed to improve efficiency, quality, supply chain resilience and profitability for its customers.

100+
years of expertise

1,200+
global suppliers

2.2 Bn
parts supplied annually

750
dedicated members serving globally

1,500+
global customers

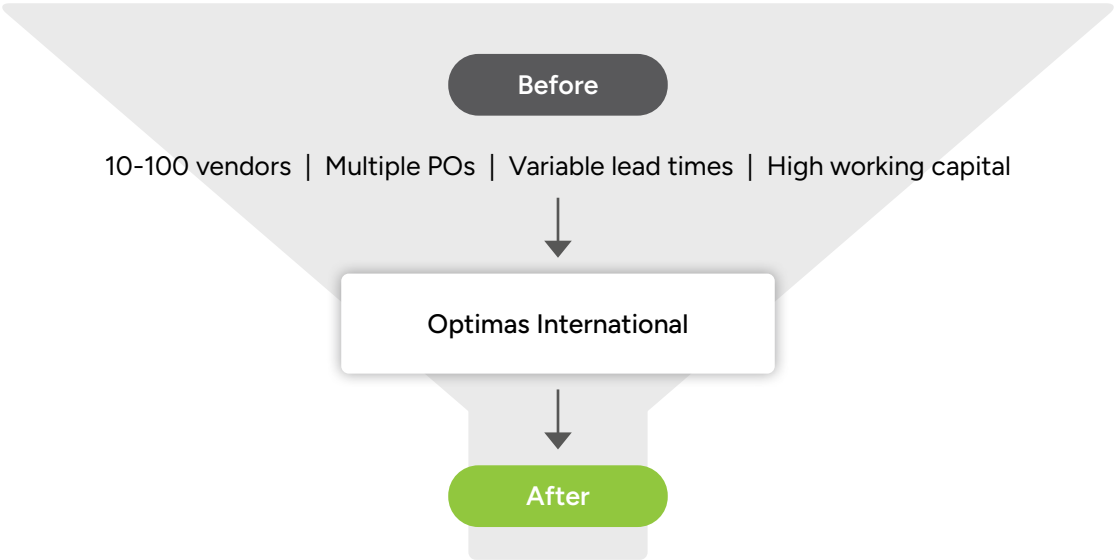
40,000+
SKUs supplied annually

0
defect culture

365
days a year support

Support Beyond Components

- **Global Presence, Local Support:** We help customers maintain consistency, reliability and speed across their operations through our global and local expertise.
- **Bespoke Engineering:** Our expertise enables us to deliver fastening solutions tailored to meet specific manufacturing requirements.
- **Supply Chain Risk Mitigation:** We empower supply chains through strategic sourcing, strong supplier networks and proactive planning.
- **OptiTech® - Smart Inventory Management:** Using smart inventory solutions and real-time visibility tools, we help customer operations and reduce stock issues.
- **Smart BOM Management:** By improving standardisation, reducing complexity and cost, we simplify BOM management, supported by OptiSpec®.
- **Quality Assurance:** You're in good hands with our zero-defect culture, rigorous supplier audits and best-in-class standards.



More orders on time	Higher cycle count accuracy	Orders shipped correctly on time	Lower return rate

Key Account Growth

Off-Highway OEM

35+ years of partnership

- Accounts grown by 15x
- SKUs increased by 275%
- Net sales increased over 10x

Power Generation OEM

30+ years of partnership

- Facilities grown by 11x
- SKUs increased by 1,100%
- Net sales increased over 23x

Luxury Vehicle OEM

20+ years of partnership

- 42M parts supplied annually
- Unique SKUs grown 1.5x to 90%
- Net sales increased over 6x

Automotive Tier-1

15+ years of partnership

- Accounts increased by 19x
- SKUs increased by 168%
- Net sales increased by 14x

Global Presence, Local Support



VALUE-ADDED SERVICES

To streamline operations and maximise efficiency

- ### Bespoke Engineering Expertise

  OptiSpec®-powered part design, testing and BOM management. Partner with our engineers to drive efficiencies and savings across your operations.

- ### Strategic Sourcing

  Global and local sourcing strategies backed by our vast supplier network and access to world-class manufacturers. This delivers a broad, resilient product range for every need.

- ### Supply Chain Management

  Kitting, secondary operations and inventory management, powered by tech-enabled solutions, delivery solutions and vendor consolidation. We get the right parts to the right place at the right time in the right quantity, reducing risk, cutting lead times and boosting productivity.

- ### Quality Assurance

  KPI-driven performance and industry standards. Know you're in good hands with our zero-defect culture, rigorous supplier audits and best-in-class standards across every part we deliver.

Connect with our experts

OR

collaborate@optimas.com