

BEST PARTNER FOR VACUUM AND SUB-FAB SOLUTIONS

HIGHLIGHT TECH CORP.

www.htcvacuum.com

HEADQUARTERS

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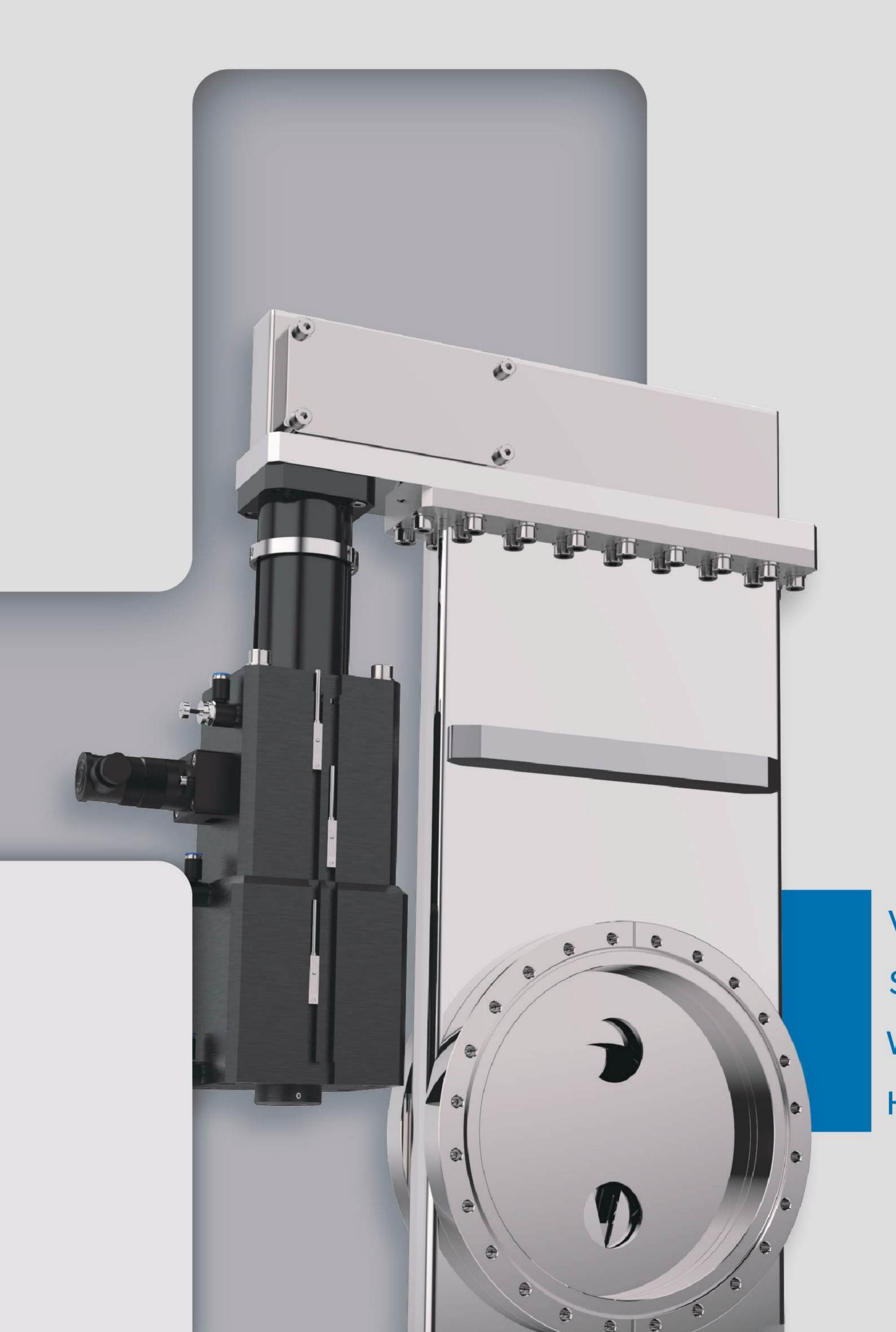
OPERATION CENTER

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Vacuum System Services & Solutions
Sub-Fab Services & Solutions
Wafer Processing Solutions
High Power & Voltage Solutions

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ESSENTIAL SOLUTIONS FOR FAB APPLICATIONS

Htc Group specializes in providing advanced vacuum technology solutions tailored to the semiconductor industry, focusing on resolving particle issues and optimizing exhaust gas systems to boost production yields. Through

innovation, we undertake wafer manufacturing challenges, helping our customers achieve their energy efficiency and carbon reduction goals.















50+



Vacuum System & Sub-Fab Service

Valves/Parts/Chambers/TMP/Wet Scrubbers/ Pump Service & Sales



Power Supplies & Plasma Generators

Electronic / Equipment



Semiconductor Inspection Equipment Sales

Testing Equipment



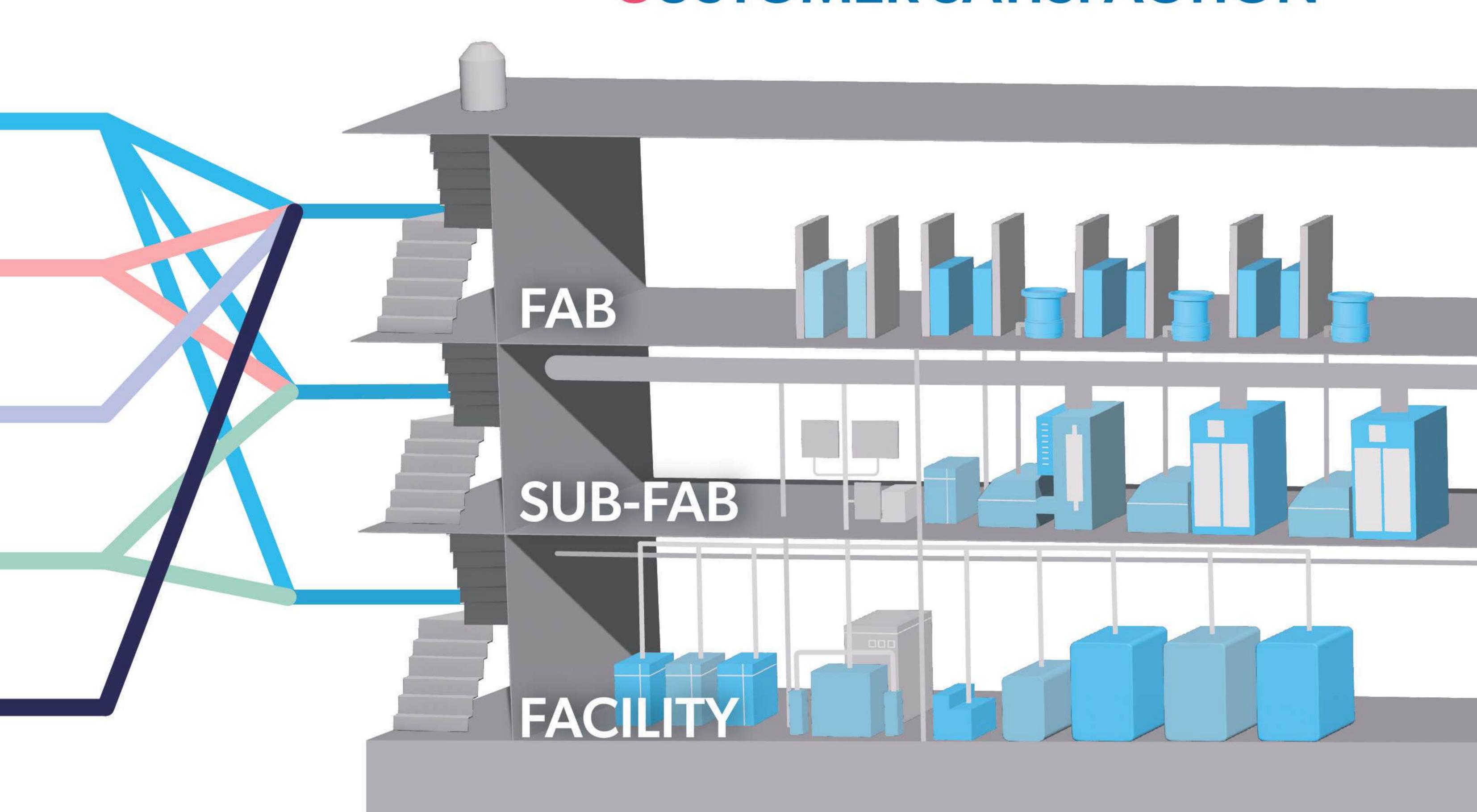
Dry Pump Overhaul

Pump Overhaul Services, Refurbished and Spare Parts Sales.



Cleanroom Engineering

Component Cleanroom Engineering and Precious Metal Stripping and Refining Services HIGH QUALITY, TIMELY RESPONSE, **CUSTOMER SATISFACTION**

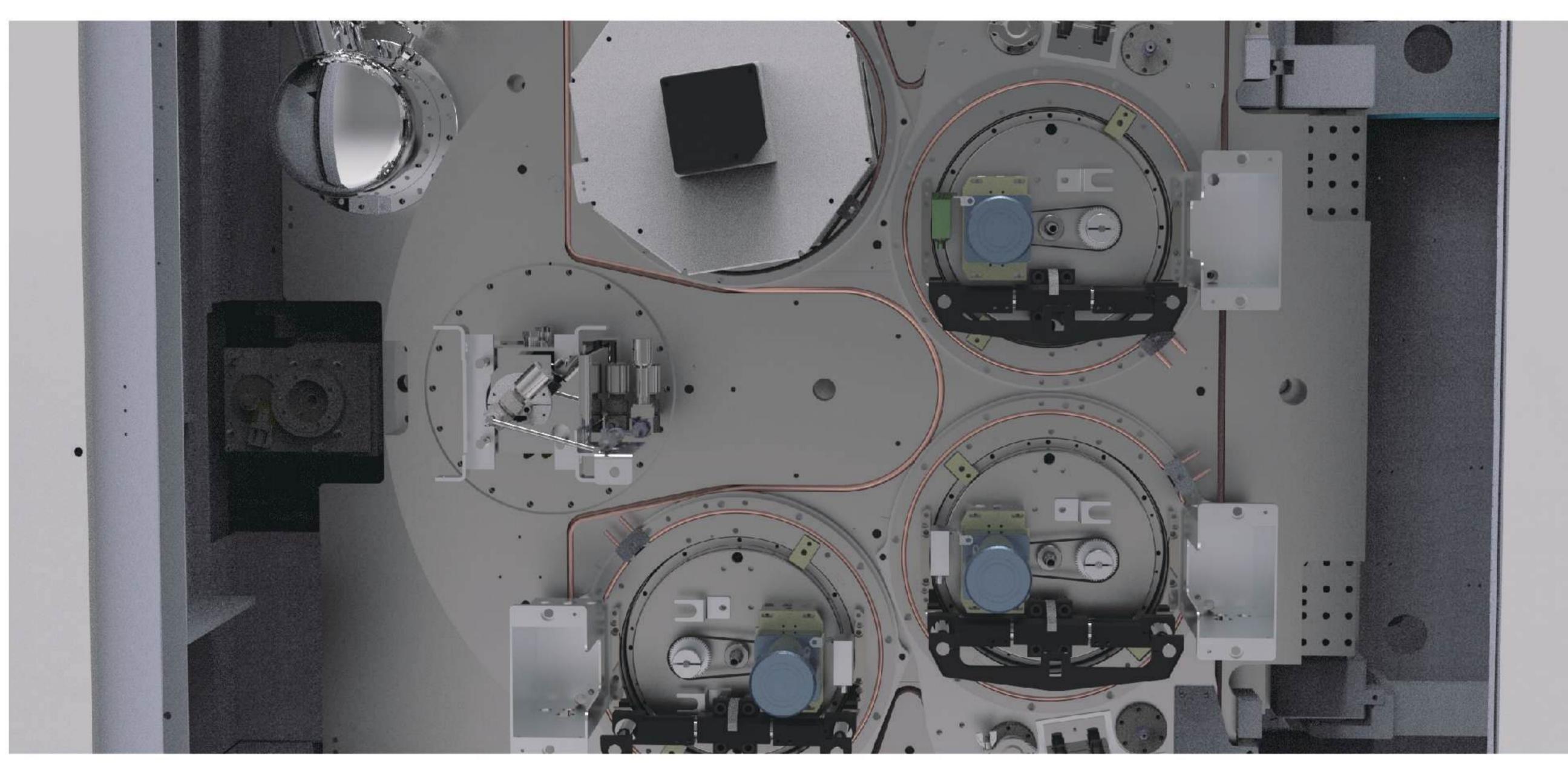


PROGRESSIVE WORKFLOW & ASSURANCE

From Concept to Completion: Ensuring Excellence at Every Stage

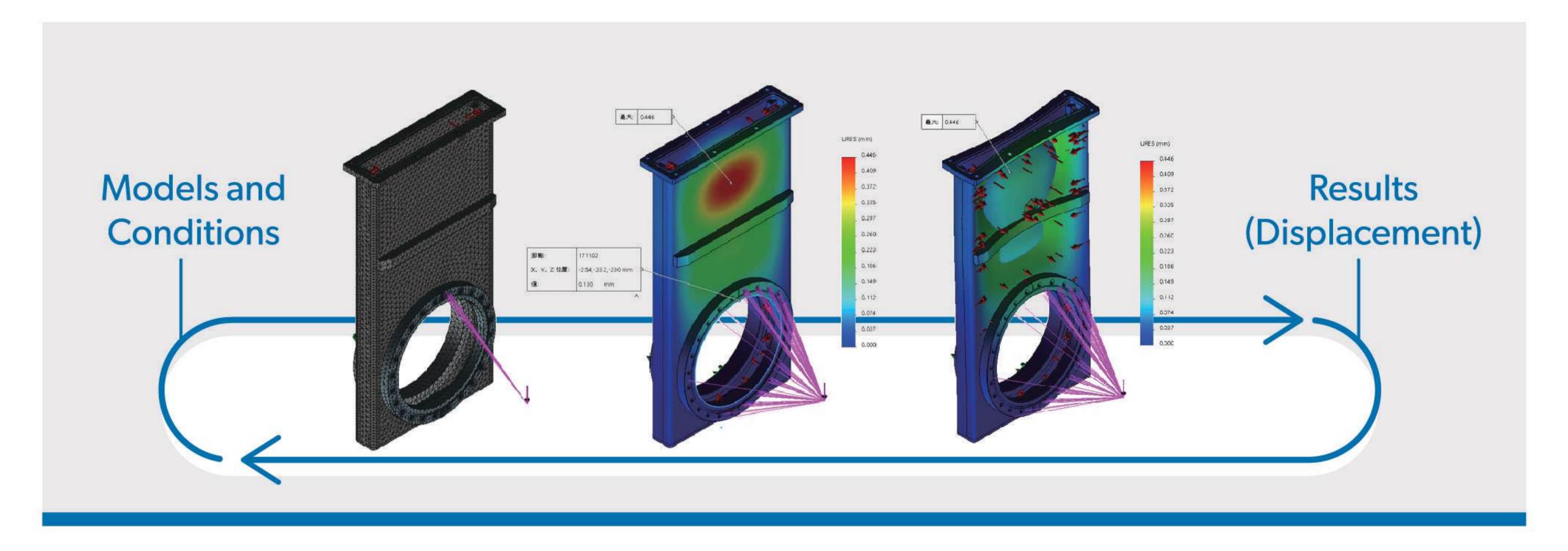
Innovation Design

Since 1997, Htc has been at the forefront of vacuum parts development and system integration. We offer a comprehensive range of parts and services, tailored to meet your specific needs. Our innovative design approach focuses on understanding your requirements to deliver solutions that enhance performance and efficiency.



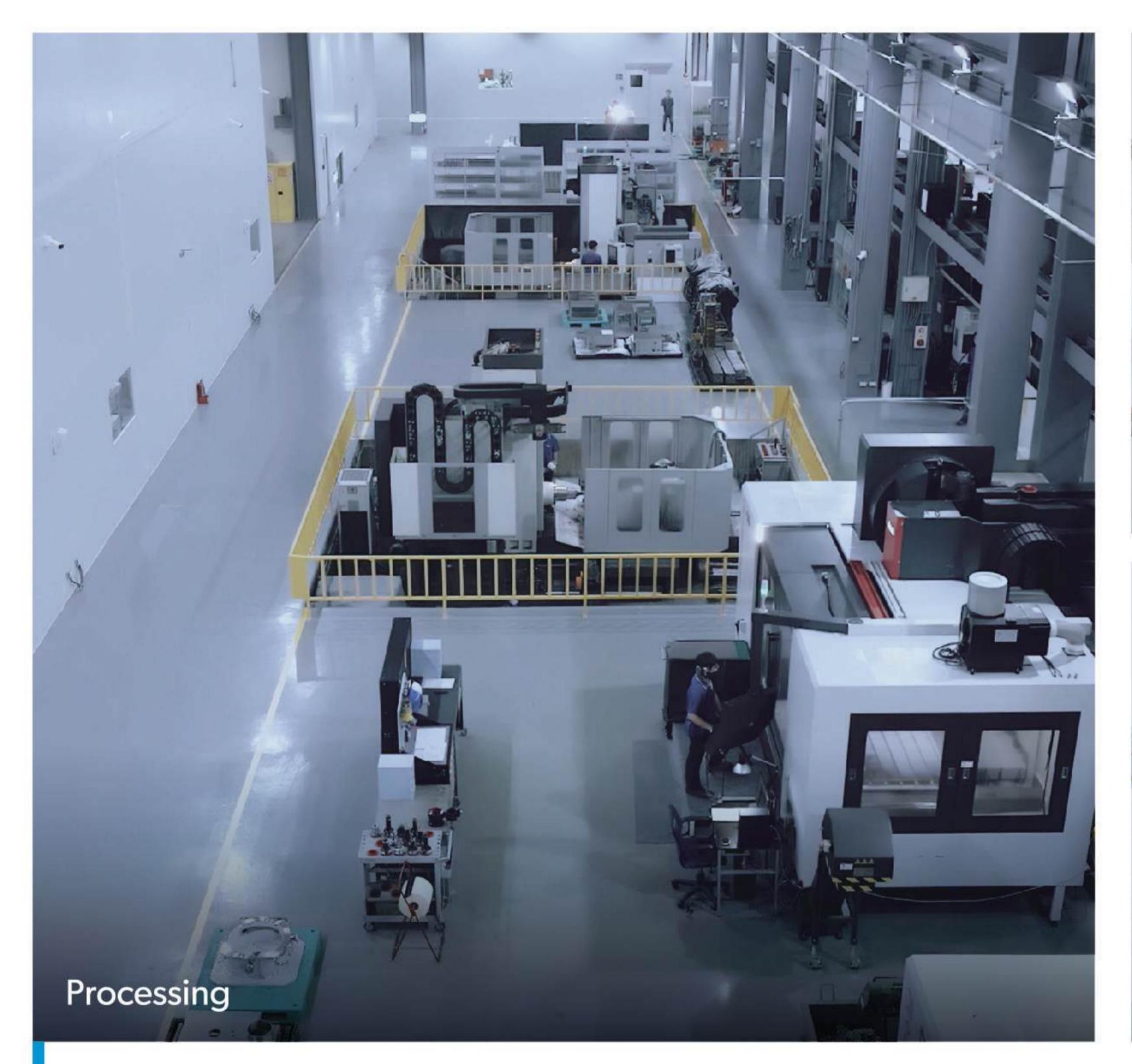
Precision Verification

Ensuring the highest product quality is our priority. We rigorously collect data from customer feedback and on-site services to develop precise test plans for our prototypes. Every variable and factor is meticulously considered in our simulation tests. Each Htc product undergoes thorough testing from the design phase to manufacturing, guaranteeing reliability and excellence.



Consistent Manufacturing

At Htc, quality is our cornerstone. We integrate cutting-edge processing techniques to establish a consistent, efficient, and reliable production workflow.







Every Htc product is crafted with meticulous attention to detail, following standardized procedures to ensure superior quality and consistency.



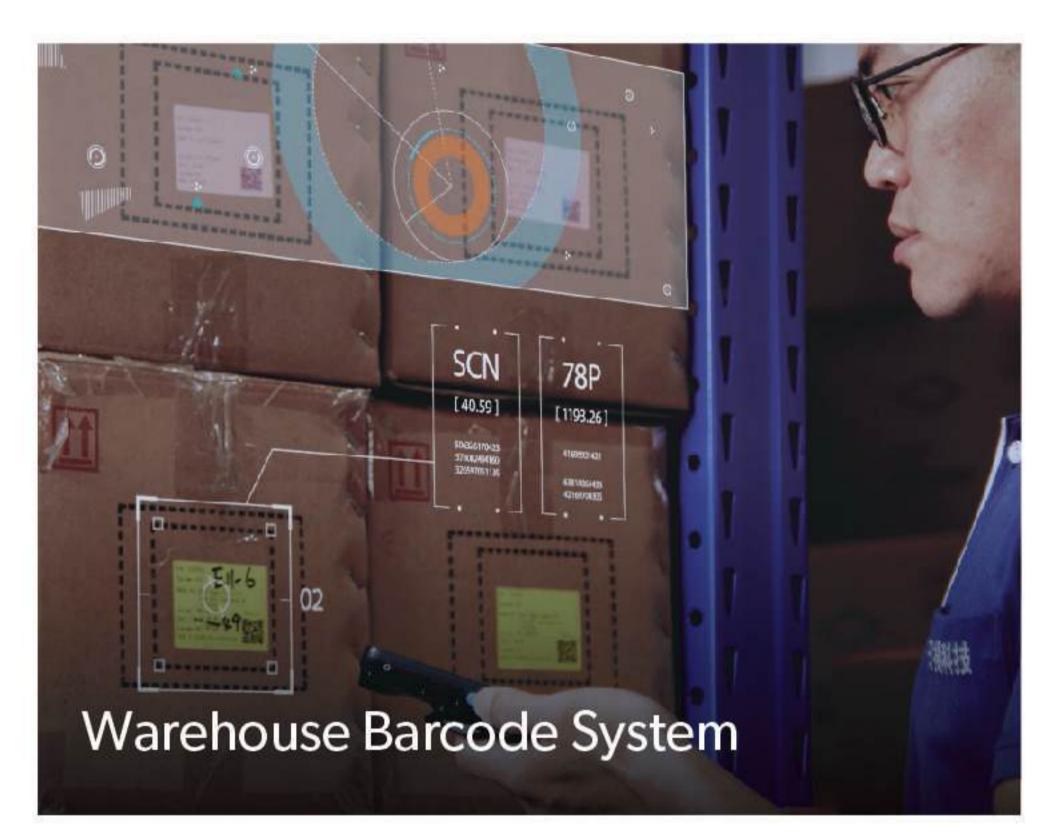


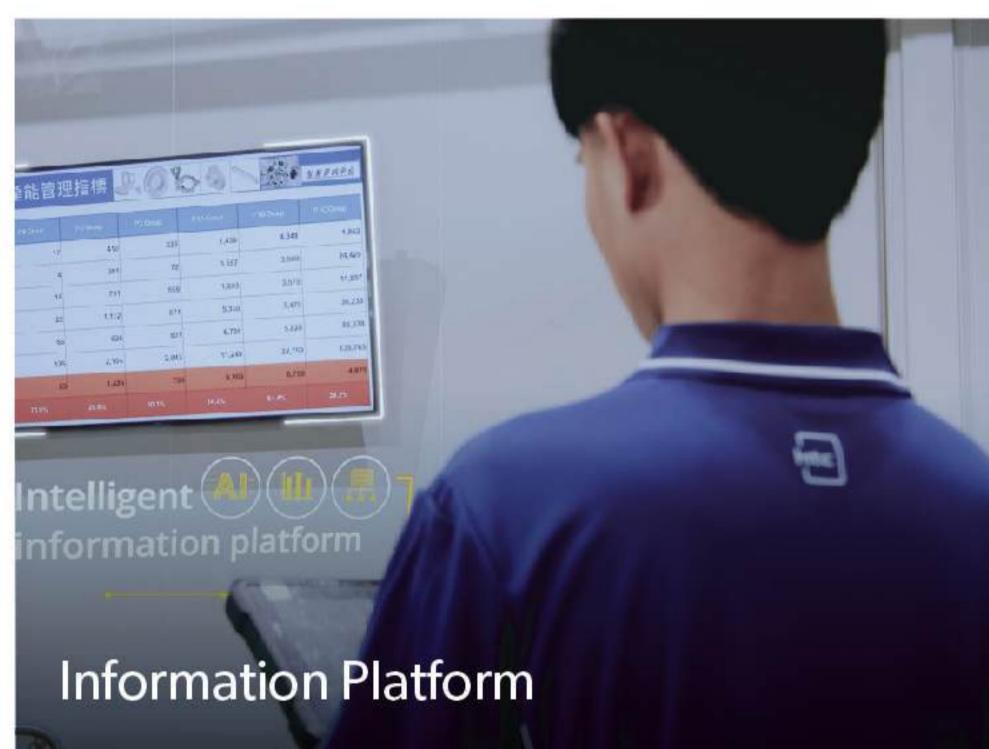


Smart Operations

Our SMART management system provides real-time monitoring and analysis of production data, preventing unexpected issues and sudden shutdowns.









Combined with automated production lines, we ensure maximum efficiency, quality, and workplace safety. Our proactive approach guarantees smooth operations and continuous improvement.







COMPREHENSIVE VACUUM SOLUTIONS

Beyond Products: Collaborative Solutions for Every Challenge

Vacuum Components

Flanges

Clamps

Centering Rings

Gaskets

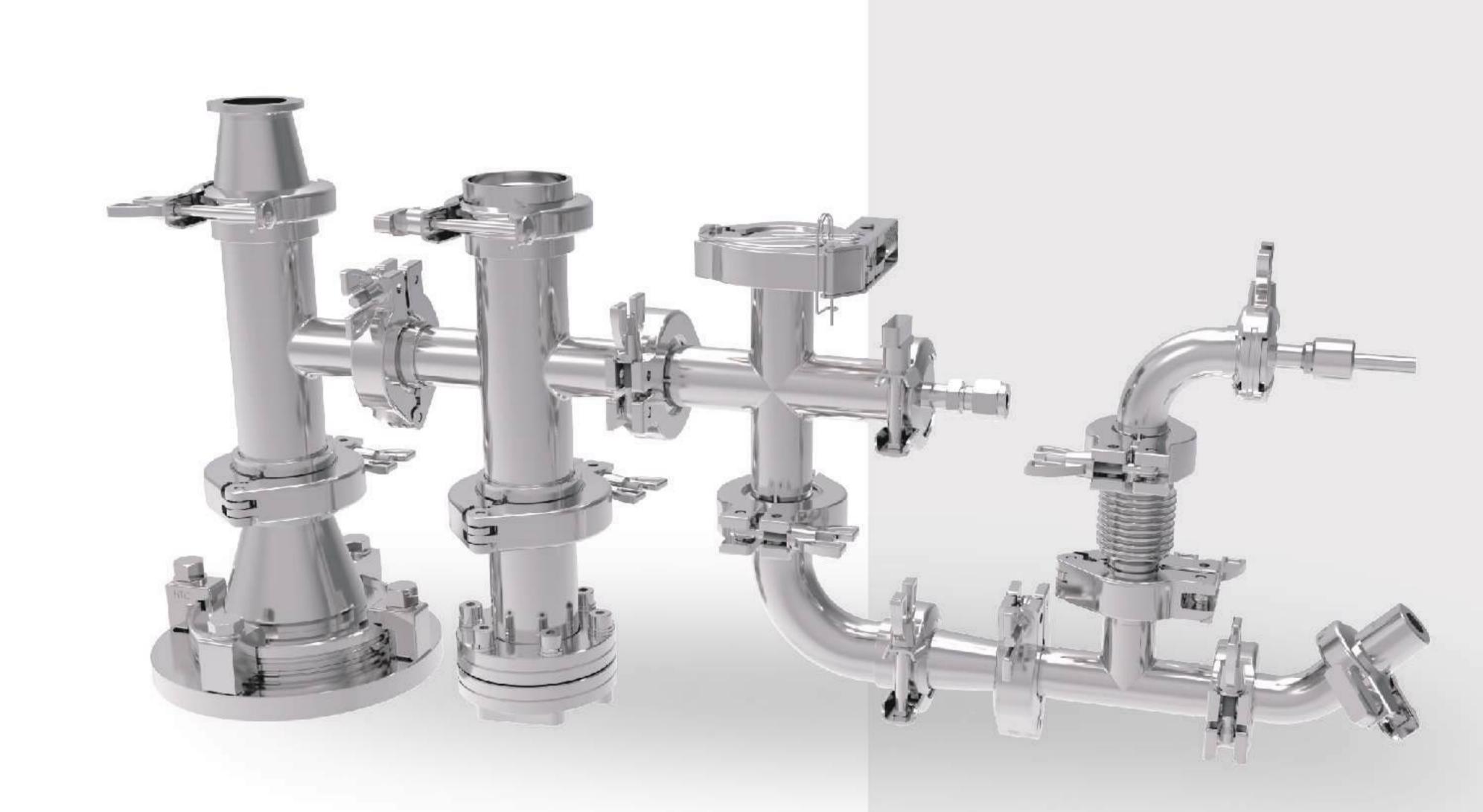
Bellows

Fittings

Adaptors

Viewport Feedthrough

Vacuum Gauge



Vacuum Chambers

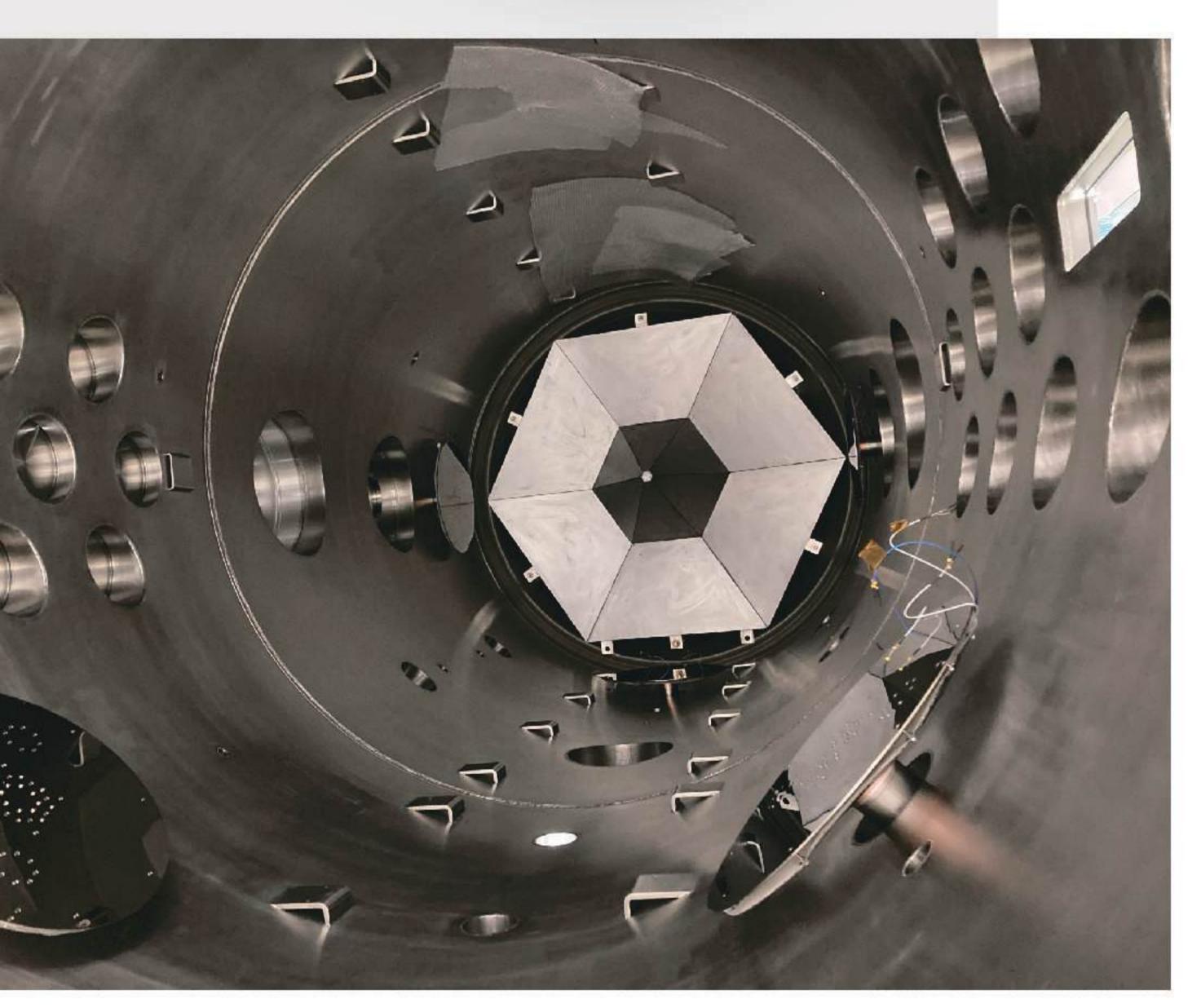
Aluminum Vacuum Chambers UHV Vacuum Chambers Synchrotron Radiation Research Institutions for Academic Research **Custom Vacuum Chambers**





Vacuum Valves

Angle/Inline Valves
Gate Valves
Butterfly Valves
Transfer Valves
Pendulum Valves
Ball Valves
Check Valves
Venting Valves
All Metal Valves
APC Valves



System Integration

Satellite Reaction Wheels Test System
UHV Chambers for Beam Line
Ground Application System for Hard X-ray
Modulation Telescope
XHV System for XPS/ESCA
Space Simulation Vacuum Chamber and System

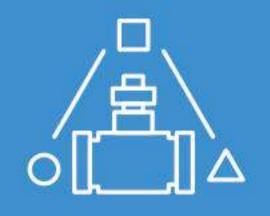




Low Vibration Pneumatic Valve



FESTO/Htc co-developed pressure control technique that can reduce vibration over 70%



Ideal for various pneumatic valves used in advanced semiconductor processes



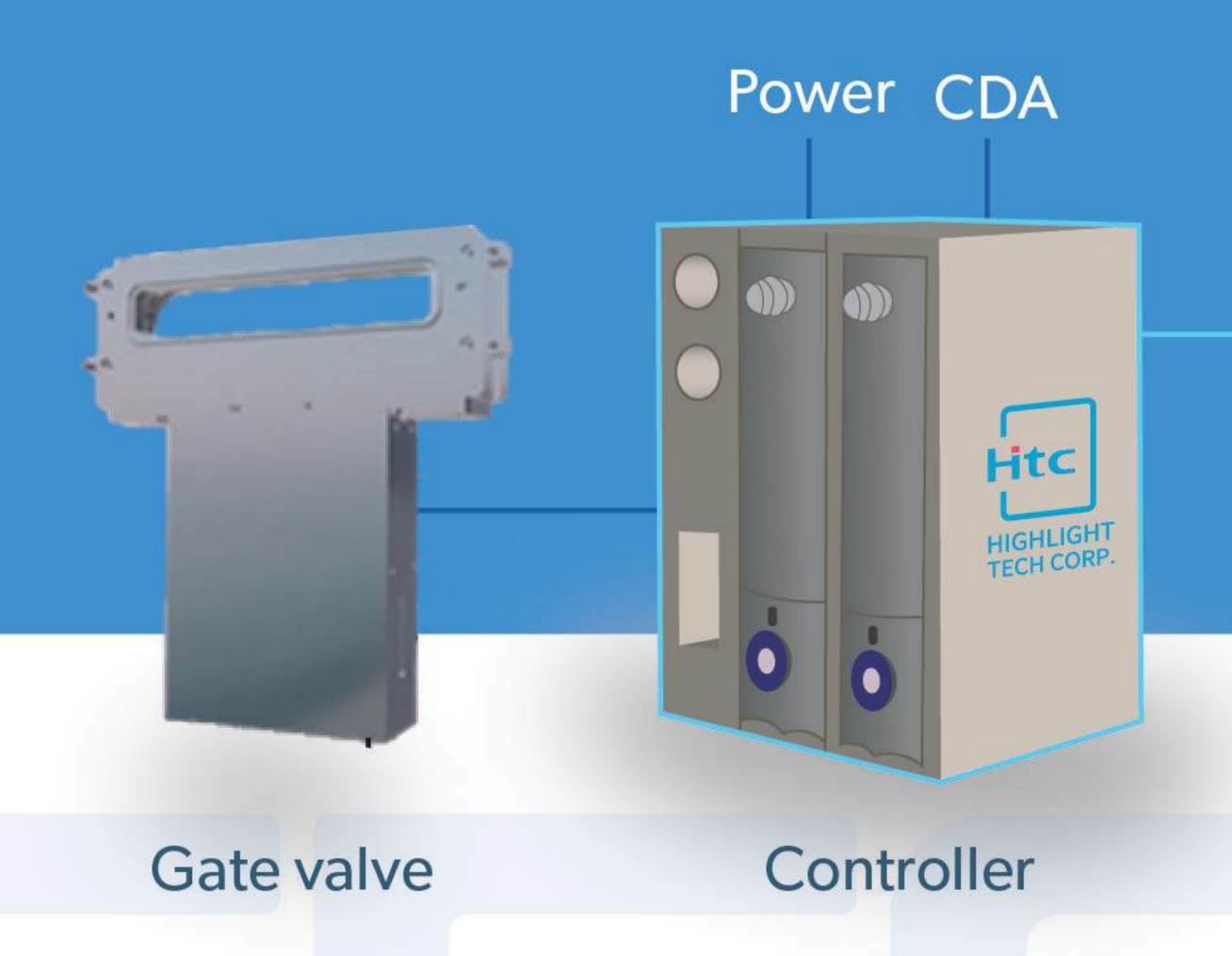
External module can be used to upgrade existing pneumatic valves



Embedded module will be developed as new pneumatic valves



FESTO's compact, low-vibration solution with Htc Valve will be launched in Q4, 2024.







FESTO Controlled
Pneumatic Technique

SOLUTIONS FOR PARTICLE & EXHAUST

Enhancing Pumping Efficiency: Tackling Particle Clogging in Vacuum Systems

RCC (Rotor Cover Cap)

Prevent residue buildup, reduce particle recoil, and boost process yield

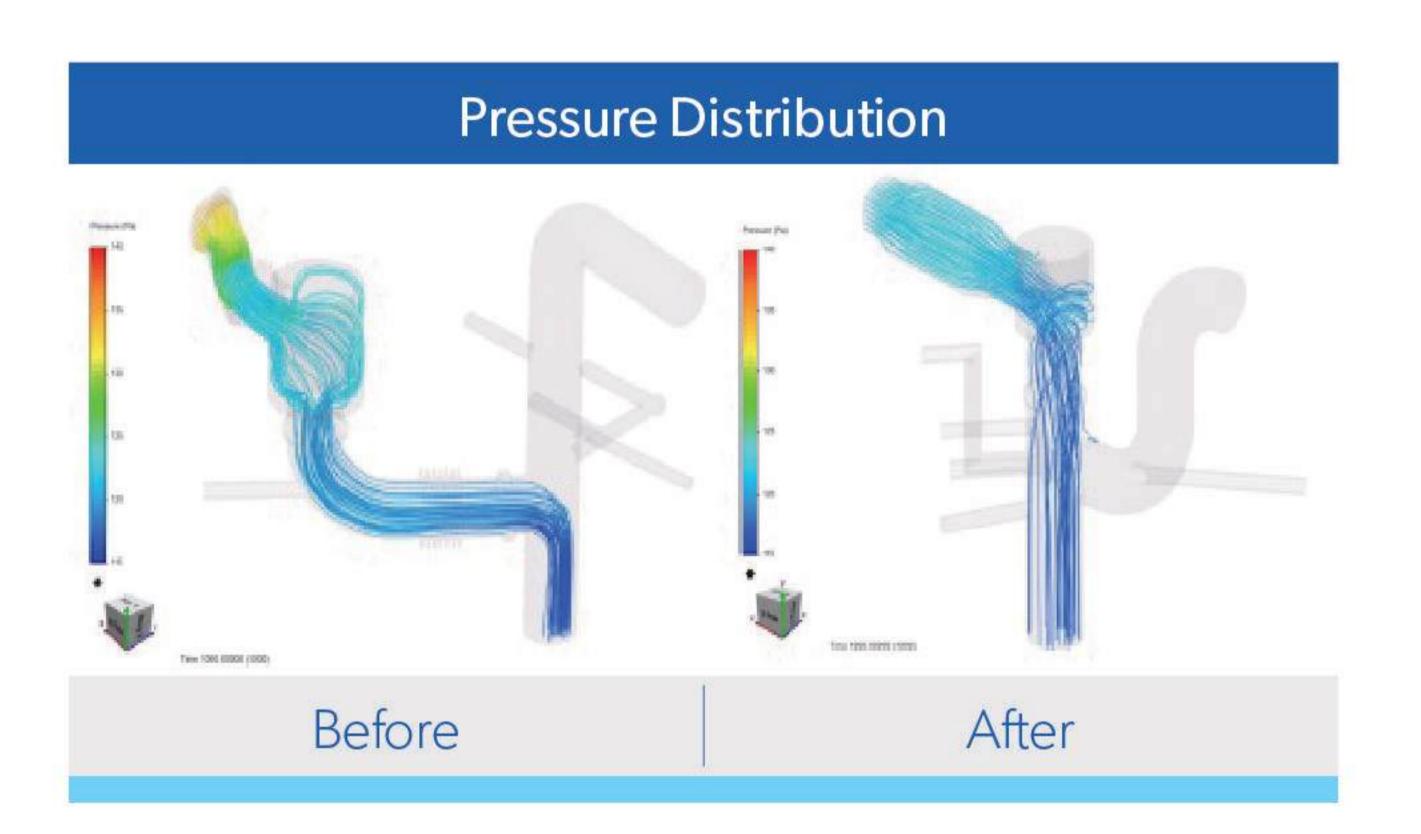
- Prevention of Residue Accumulation
- Reduction of Particle Recoil to the Chamber
- Reduction of Particle Accumulation on the Wash Plate
- Reduction of Chemical Reactions Between Screws and Gas



Foreline Flow Field Simulation and CIP Solutions

Visualize and identify particle buildup with custom solutions to enhance efficiency

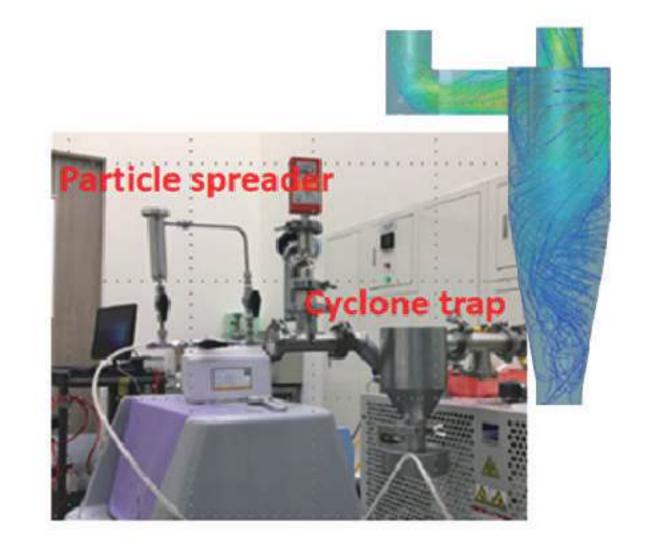
- Utilize Fluid Domain (FD) techniques to analyze and address particle accumulation
- Custom-designed clogging solutions to prevent future issues
- Tailored solutions for process improvement and increased yields

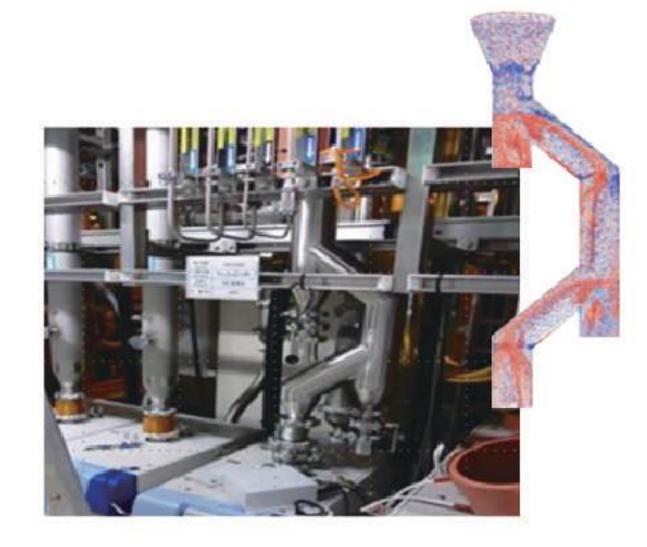


Cyclone Trap

Passively collect particles at inlets, improving performance without extra utilities

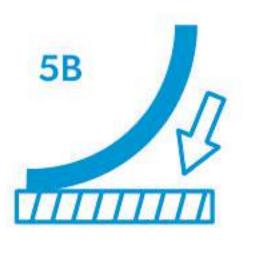
- Installed on the inlet port of dry pumps or scrubbers
- Efficient particle collection without electricity, water, or air supply
- Enhance equipment performance and extend lifetime cost-effectively





WEH® Coating

Prevent particle clogging, reducing repair frequency in advanced processes



temperature

Hardness

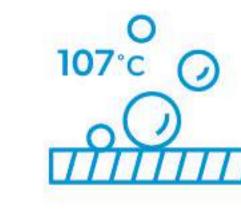
particles.

Good adhesion to stainless/Al

Wide range of working

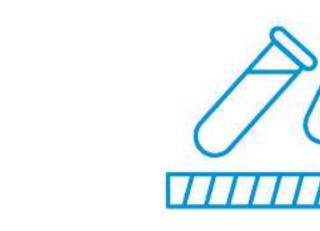
Protect vacuum parts from being

bombarded/scratched by



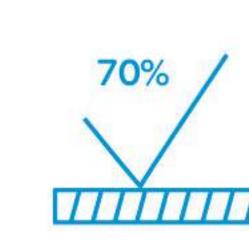
Hydrophobicity

High contact angle, easy to



Anti-Corrosion

Protect vacuum parts from being etched by acids and radicals



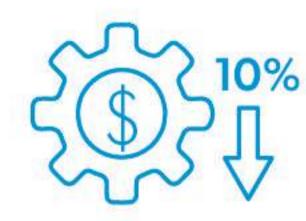
Roughness

>70% roughness reduction suggesting that deposition and reaction on the surface can be decreased.



Heater Jacket and Thermal Management Solutions

Boosts thermal management and extends vacuum part lifetime cost-effectively



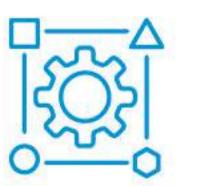
Price

Lower price by 10%



Energy

Energy saving efficiency of 27.2%



Flexibility

Suitable for various of vacuum parts.



Eco

Environmental friendly.



Lifetime

High-quality packaging and materials.



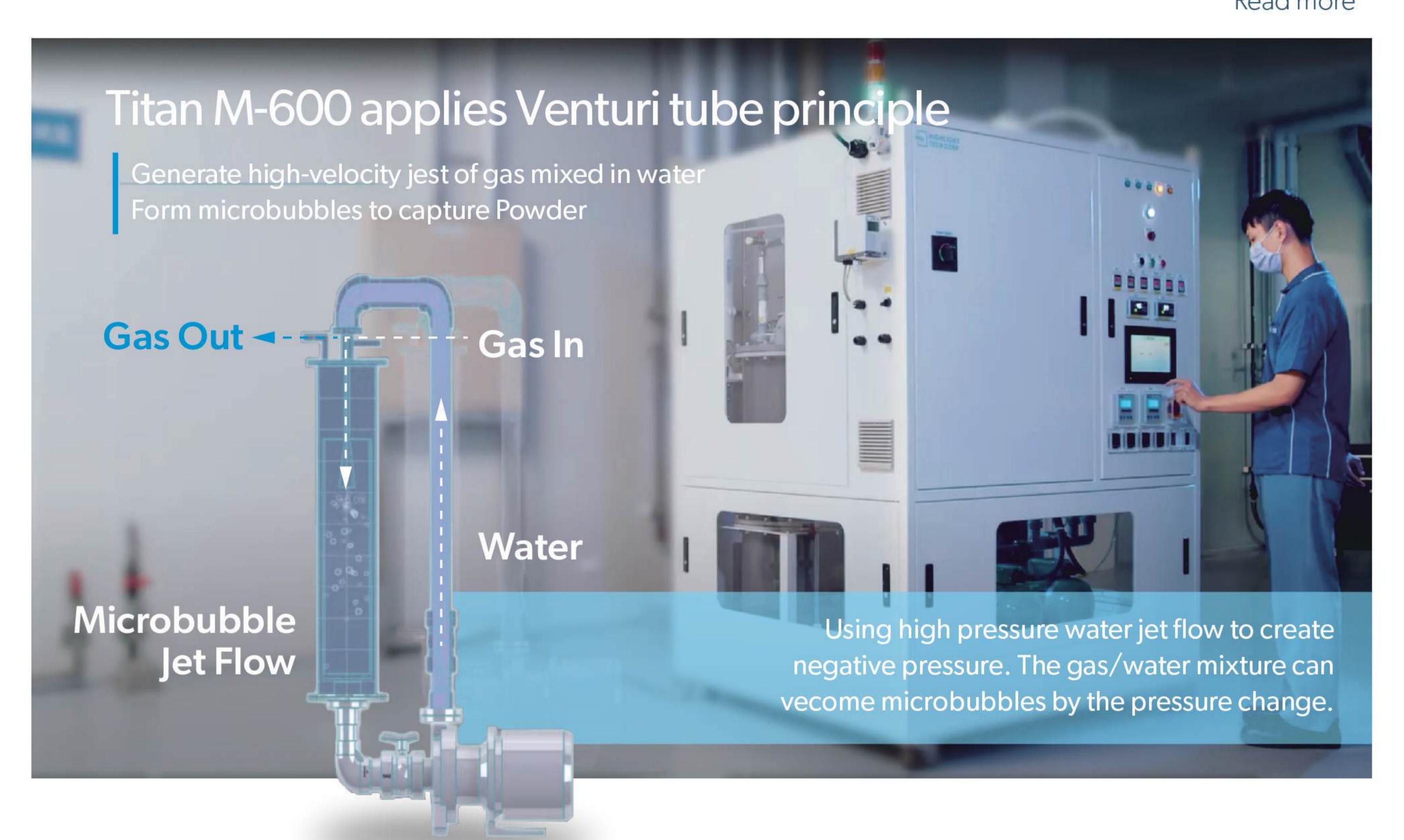
Powder-free

No particle release issue.



Micro-bubble Wet Scrubber





- Uses a high-speed fluid jet combined with water to generate micro-bubbles that collect particles and eliminate PM2.5 emissions
- Real-time monitoring by AloT provides clear lifecycle analysis and data for early maintenance, preventing equipment shutdowns and improving production yield rates



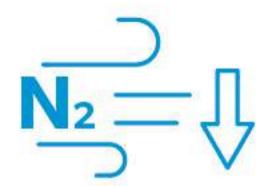
High Particle Capture Rate

Over 90% efficiency



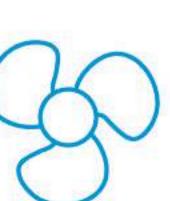
NO_x Emission Elimination

Effectively eliminate NO_x emissions



Reduced N₂ Purge Usage

Decrease N2 purge by over 25%



Negative Pressure Design

Support inspections and prevents air leakage

Plasma Scrubber



Long Plasma Flame

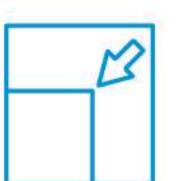
- Temp. Frame: 2,000-10,000°C
- Flame length: about 20cm

- Efficiently address piping clogging and particle emissions
- Provide a reliable and environmentally friendly method of cleaning and surface treatment compared to burn scrubbers, with lower costs (<60%) and longer PM cycles (>180 days)



High CF₄ Throughput

200 LPM with DRE > 95%



Compact Size

Space-efficient design (80x80x175cm).



Multi-Chamber Support

Support over 10 chambers with one scrubber



Proven Reliability

Over 1,500 units sold to 8" & 12" fabs and solar plants.

MONITOR SYSTEM AND MAINTENANCE SERVICE

Comprehensive Monitoring:
Beyond Gas Exhaust, Full Pumping System Oversight

24/7 Turbo Pump, Dry Pump, Valve MRO Services

Comprehensive MRO (Maintenance, Repair, and Overhaul) services ensure maximum uptime and optimize performance for your vacuum systems



- Cover dry pumps, turbo pumps, and valves with 24/7 MRO services
- Analyze equipment lifetime based on usage patterns
- Ensure optimal productivity, performance, and around-the-clock efficiency

3000+

Capacity Units/year

< Turbo Pump >
Edwards, Shimadzu,
Pfeiffer, Alcatel

2000+

Capacity Units/year

Ory Pump > Ebara, Kashiyama, TA IKO, ULVAC

1600+

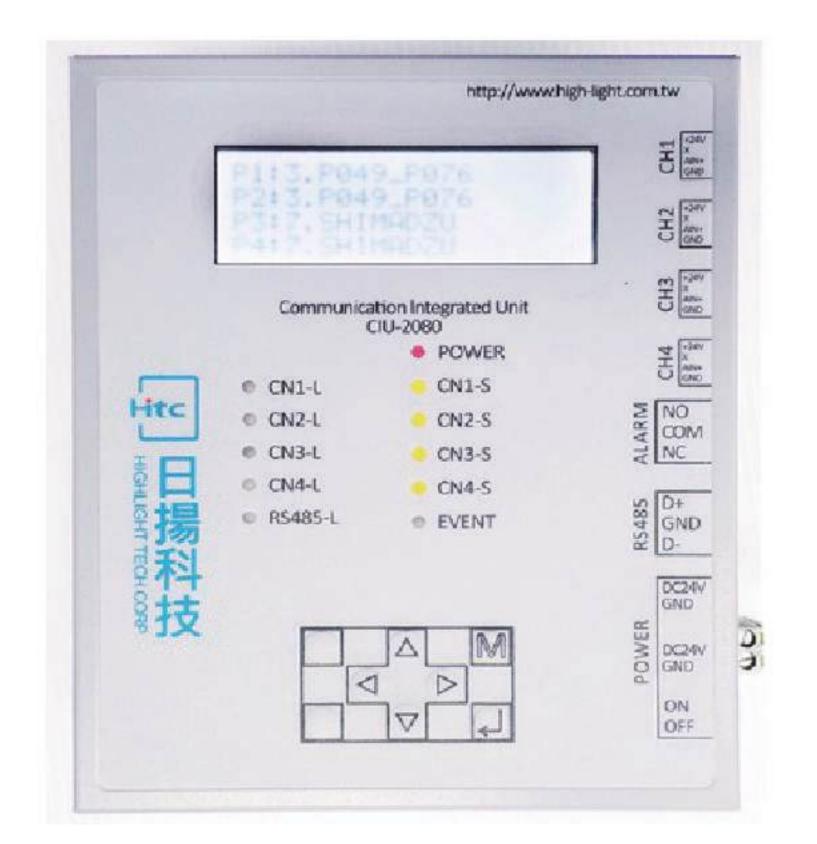
Capacity Units/year

< Valve >
Pendulum Valve,
Gate Valve

CIU Monitor System

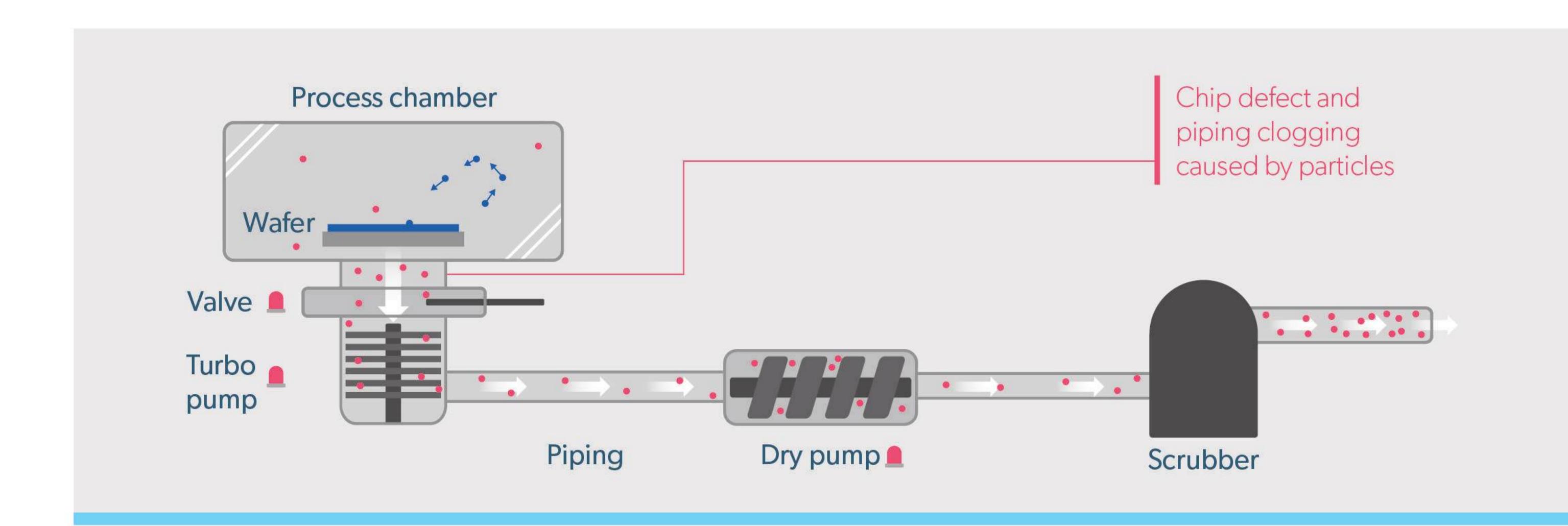
An intelligent method for monitoring and controlling pumping systems and Gas Exhaust treatment, optimizing energy usage and preventing sudden system shutdowns

- Collect and analyze data on current condition, vibration, temperature, and health indicators
- Provide real-time insights and proactive maintenance recommendations
- Prevent sudden shutdowns and ensure optimal performance and reliability



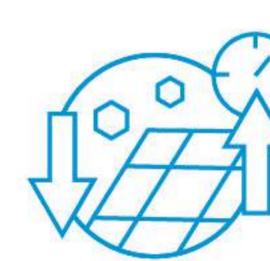
Smart Condition Monitor System (SCMS)

SCMS tracks valve, turbo pump, and dry pump conditions in real-time, sending **early warning notifications** to **prevent unexpected issues**. It assesses health, generates trend charts, and performs root cause analysis to improve reliability and efficiency.

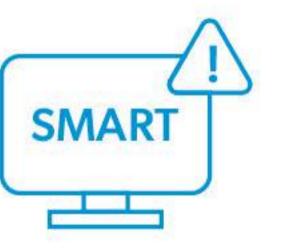




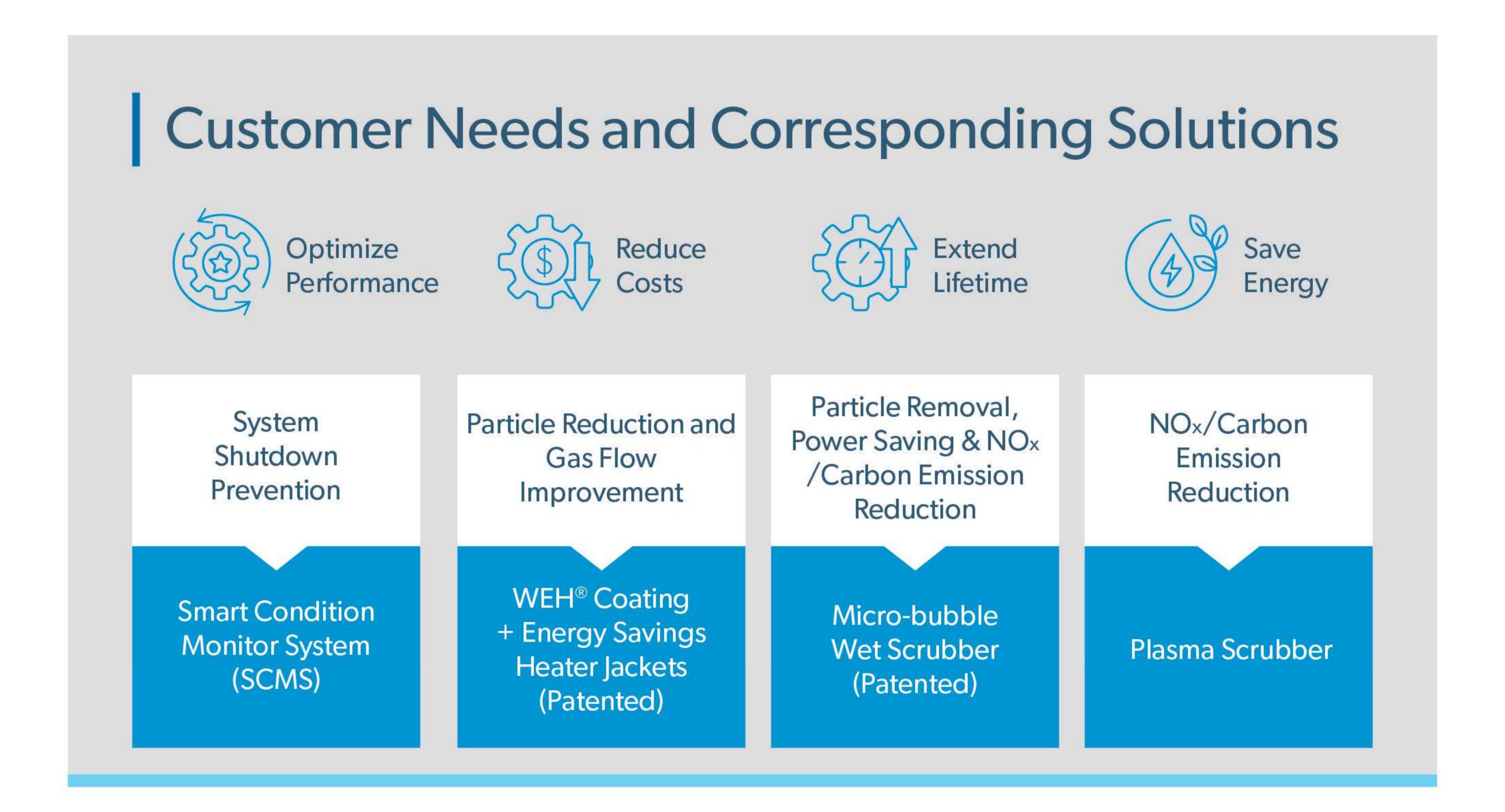
Htc's particle solutions significantly reduce particle-related issues.



Beyond particle management, our solutions extend exhaust system PM cycles and reduce dry pump energy consumption.



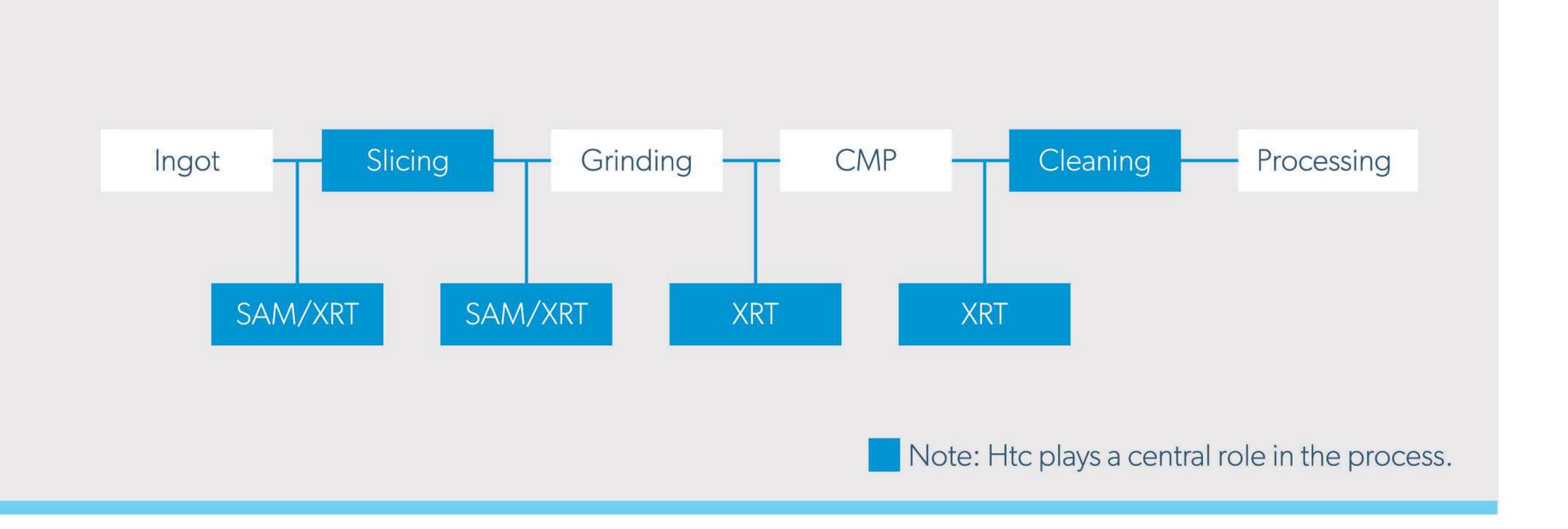
SCMS's advanced warning system prevents unexpected failures, reducing operational risks.



NON-CONTACT WAFER SLICING AND IN-LINE INSPECTION

Efficiency Meets Precision: Lean Manufacturing Solutions for Wafer Processing

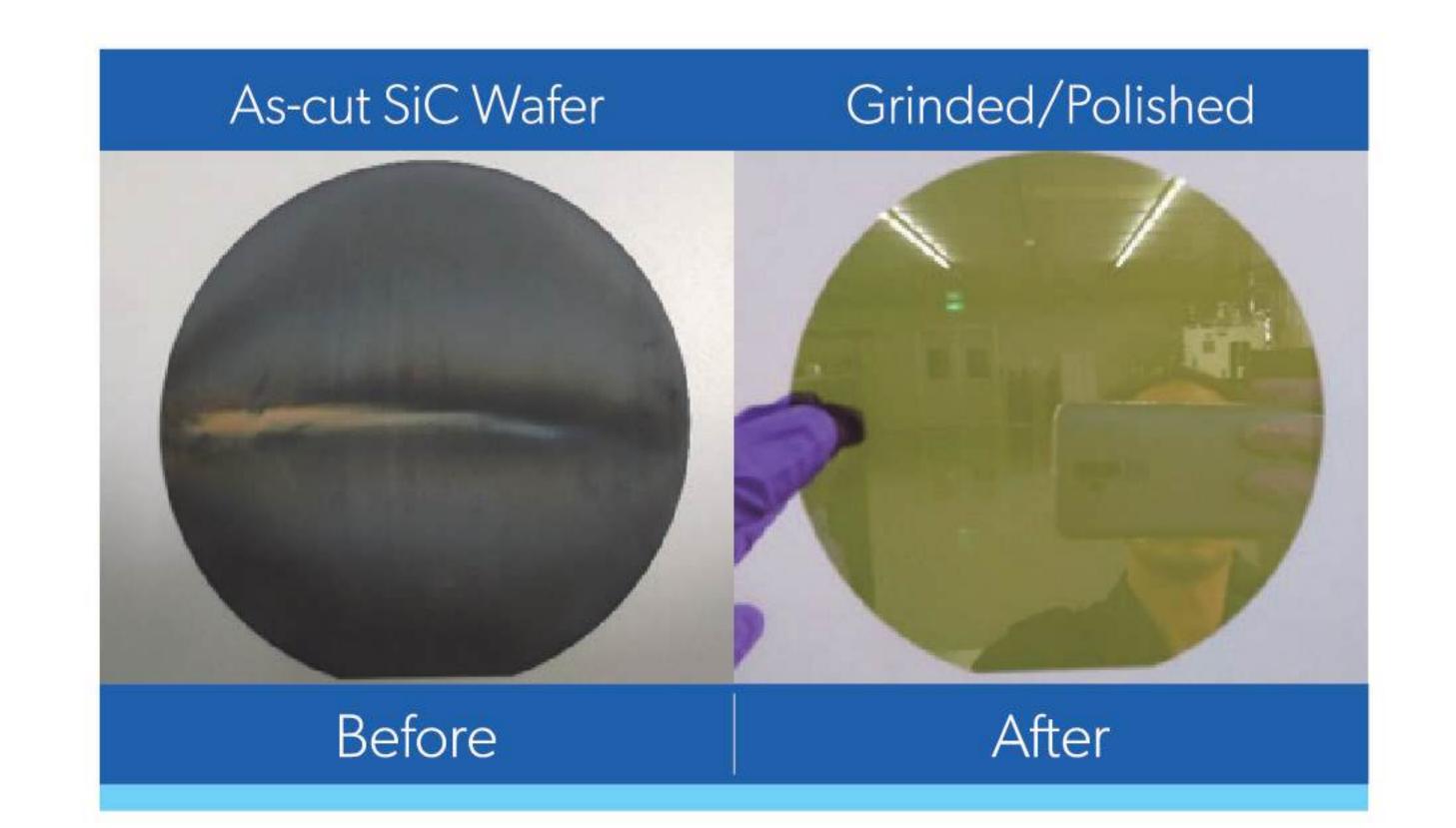
From ingot slicing to cleaning, coating, and quality inspection, Htc offers process development, contract manufacturing, and customized equipment solutions. Our technologies ensure high efficiency and minimal environmental impact.



Contactless and High Efficiency Slicing Techniques

Eliminates defects and boosts efficiency in wafer slicing without environmental impact

- Non-contact slicing eliminates flaws or defects
- Environmentally friendly: No slurry required, reducing pollution
- High productivity: 6"Sic slicing time under 8 hours
- Ideal for wafer slicing process under 8 inches

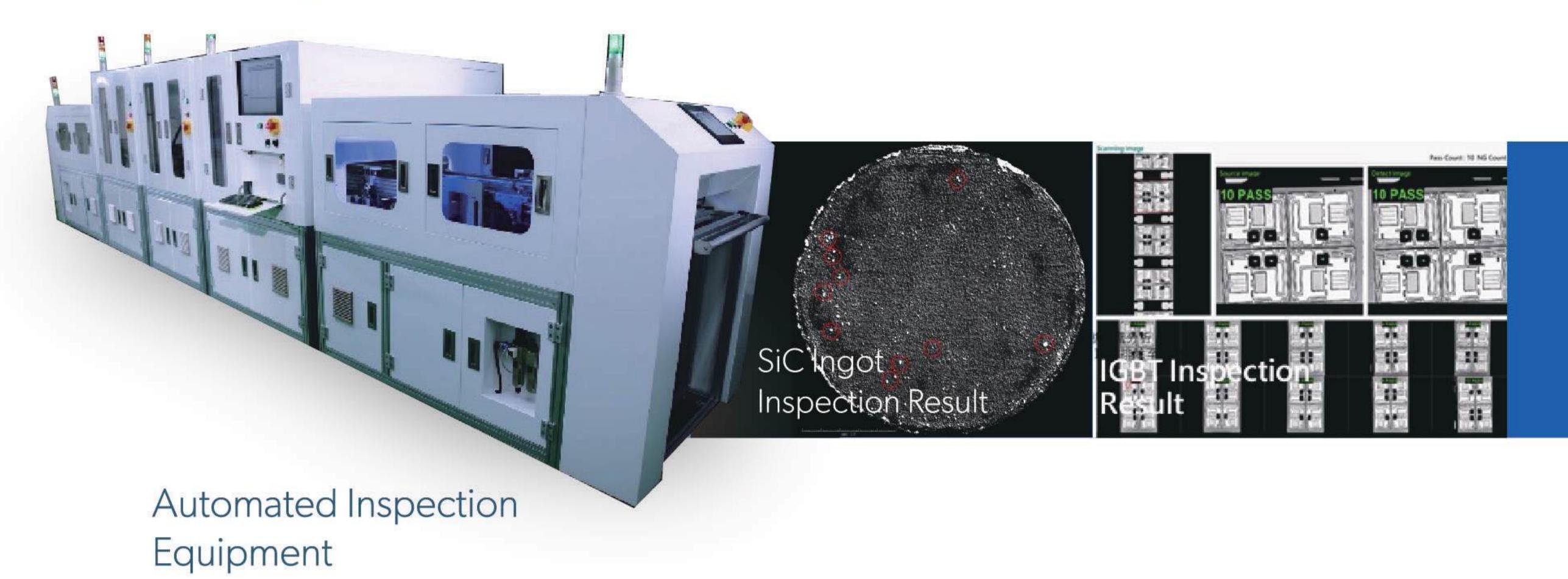




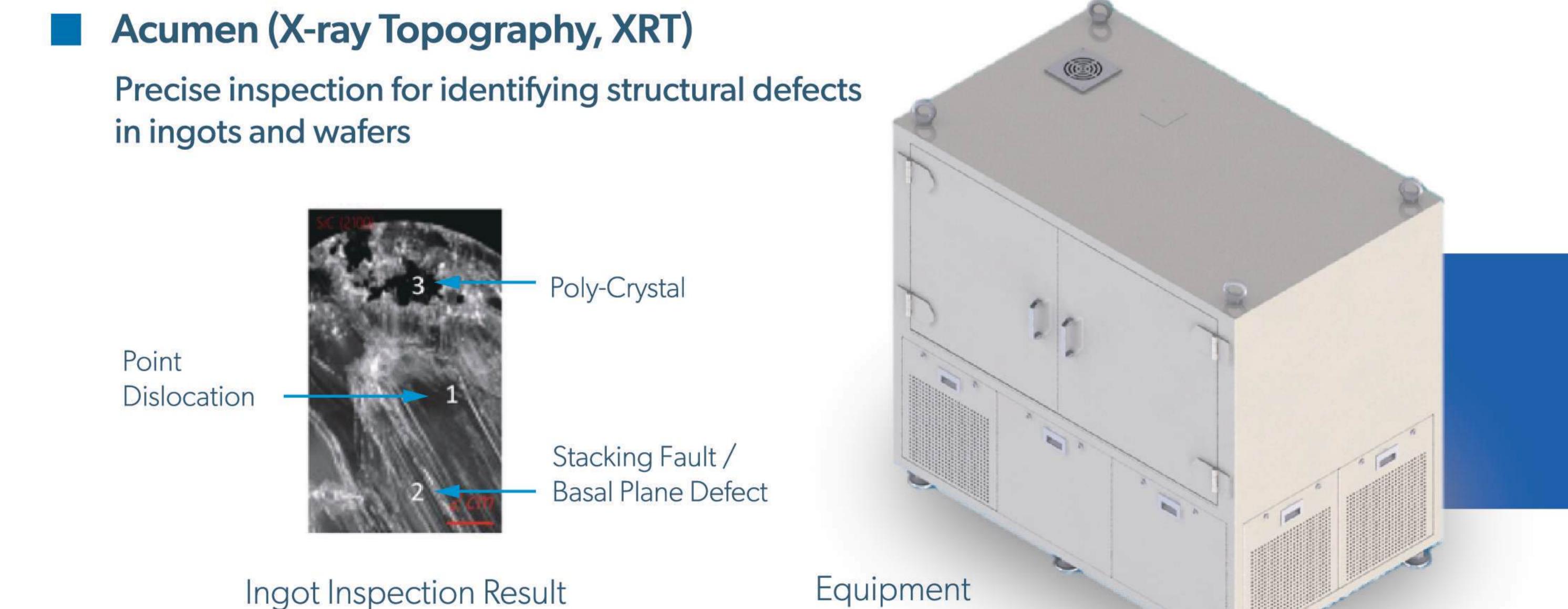


Scanning Acoustic Microscopy (SAM)

Optimize defect detection and enhance process efficiency with advanced imaging technology



- Facilitates detection and elimination of SiC ingot, wafer, IGBT, packaging module defects
- Advanced 3D Imaging: Integrated energy control and image processing for comprehensive surface analysis
- Efficient Inspection: 6" wafer scanned in 30 minutes (@40MHz Probe)



Appearance

- Support ingot under 8" and wafers with thickness between 100µm and 600µm
- Detect voids, cracks, micropipes, dislocations, and stress
- Compatible with 3D u-CT for comprehensive defect analysis

Gyro-II



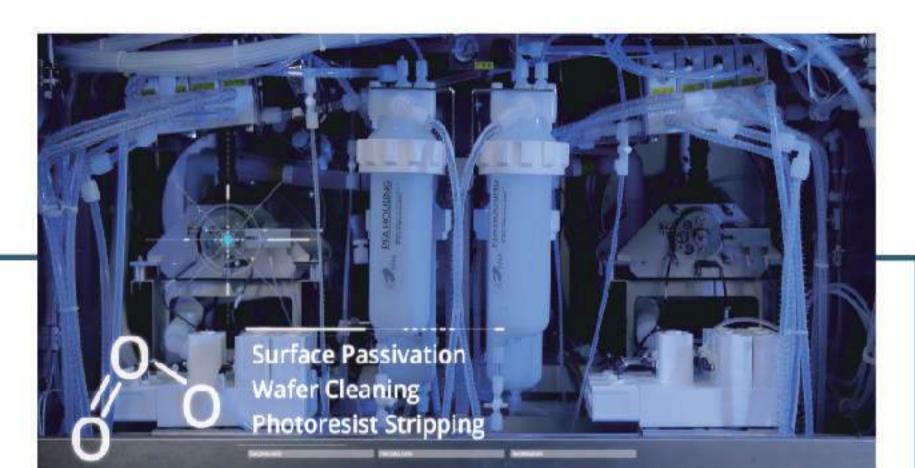
Solvent Spray Technology (SST)

High-efficiency Cleaning for Wafer Manufacturing Process

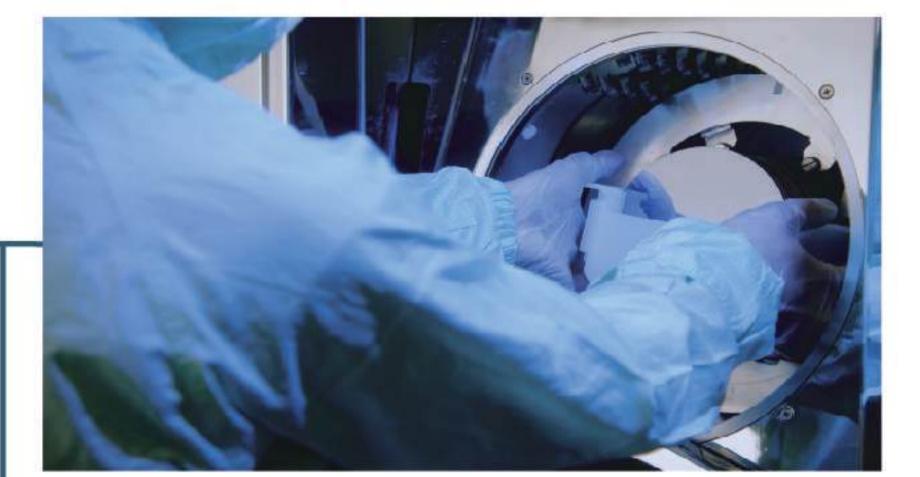
- Improve wafer cleaning efficiency with multi-wafer rotary cleaning technique
- All-in-one process with cleaning, processing and drying integrated
- Real-time monitoring and support customization request with Htc-owned system
- Customized Rotor Design & Dynamic Balancing Calibration
- Reducing chemical usage with Htc-owned DIO₃ system



Customized HMI monitoring system to ensure precise control and comprehensive oversight



Surface Passivation Wafer Cleaning Photoresist Stripping



All-in-One Solution: Integrated Cleaning, Drying and Processing for the finest performance

DIO₃ System

Htc in-house developed equipment and integrated solution for wafer cleaning

- DIO₃ system effectively cleans and removes surface particles, polymeric pollutants, and metallic residues from wafers with fewer chemicals
- Customizable Concentration Scale: 6-100 ppm
- Adjustable Flow Rate: 3-45 slm
- Precision Concentration Stability: 5%







PLASMA & HIGH POWER SOLUTIONS PROVIDER

Finesse Technology provides comprehensive technical services centering on advanced technologies and equipment for the semiconductor and electronics industries.

By incorporating Core Technology and Services of these industries, we develop our own products with optimal solutions.

What We Do Core Technology Plasma Physics, High Power & Voltage, Radio Frequency, Microwave, Electronics Control System Finesse Brand Product ACME RF Power Rack, AOS Ozone System, RPS Technology Services RPS & Ozone System Overhaul Services, CIP Solutions Key Subsystem Flasma, RF Power, Ozone System Overhaul, Refurbished Overhaul, Refurbished

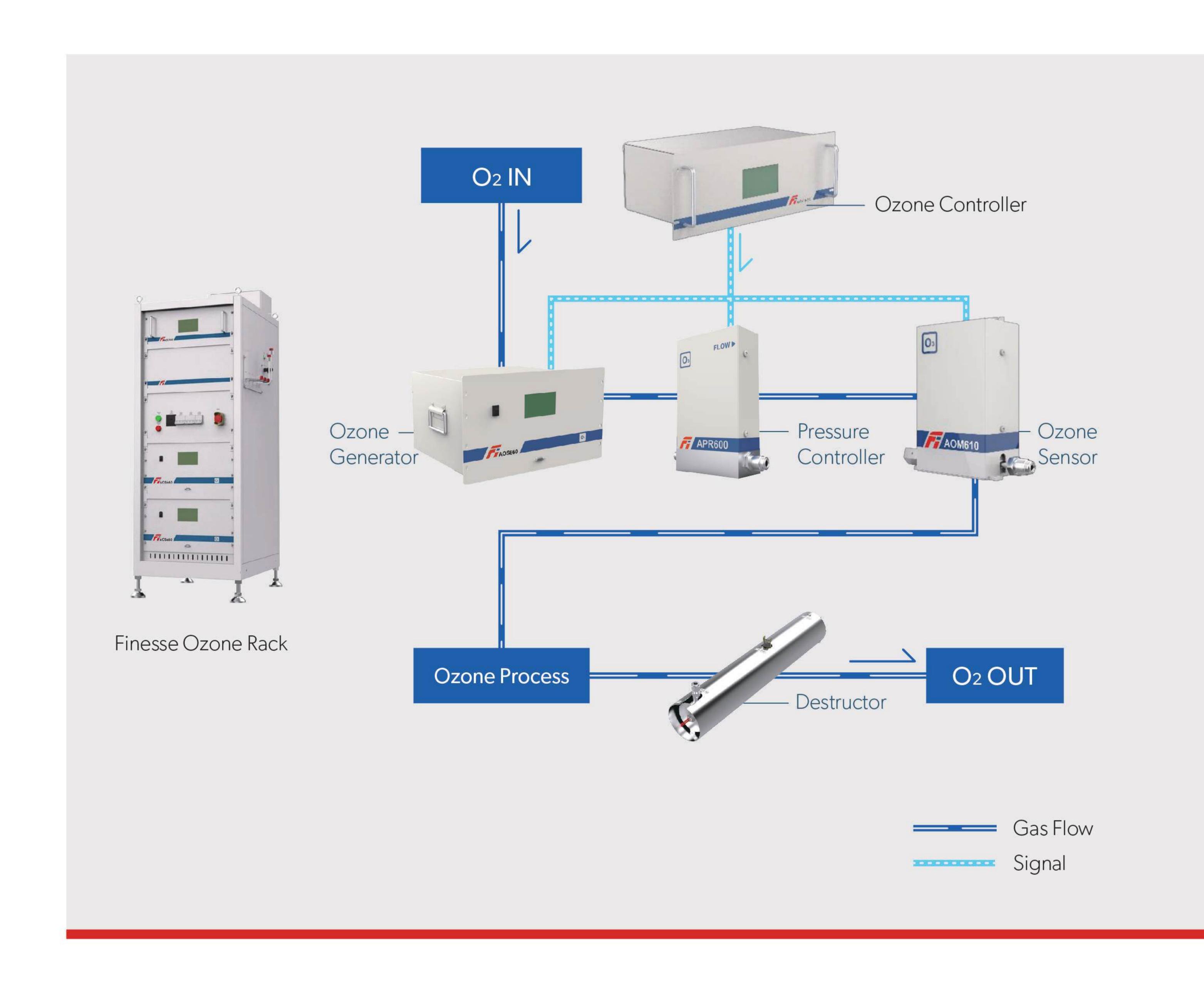
SEMICONDUCTOR OZONE GENERATOR & SYSTEM

Advanced and Customizable Solutions for Manufacturing Success

AOS 6800 Ozone System

Not only greener but more flexible

- High Concentration
- Suitable for Photoresist Strip, Wafer Cleaning, Contaminant Removal, Surface Conditioning, Oxide Growth and ALD Processes
- Power Control & Ozone Concentration Control Mode Selections
- All-in-One System: O2 MFC, Pressure Control & Ozone Sensors



INNOVATED POWER SOLUTIONS

Maximize Energy and Cost Efficiency

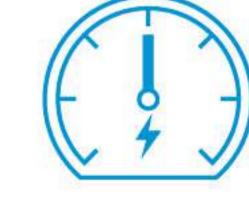
ACME® Rack

A Well-recognized Energy and Cost Saving Solution

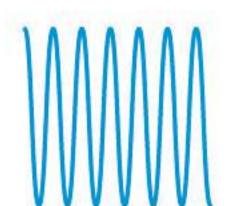
- Lower Maintenance Cost by 60-80% / year
- Save Electricity Cost by 60% / year
- Higher Availability by 5%
- Zero Consumables











Fast RF Switch High Tolerance of (Patented) Reflected Power

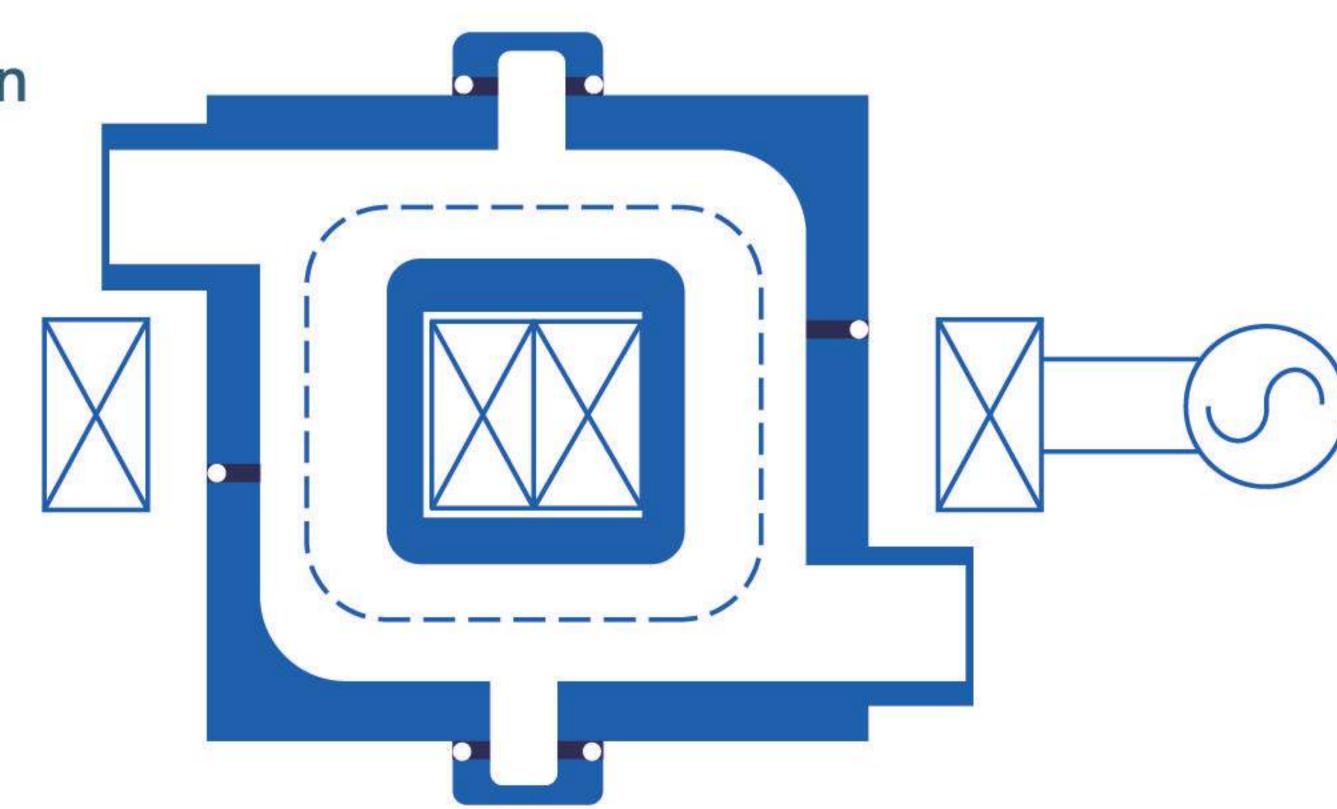
Arcing Protection

Low Harmonic/ Spurious Noise

RPS & CIP Solutions

Advanced, Customizable and Clean Power Solutions

- Patented Ignition Design
- Anodizing Improvement
- Energy and Carbon Emission Reduction in Components/System Integration
- Plasma Physic

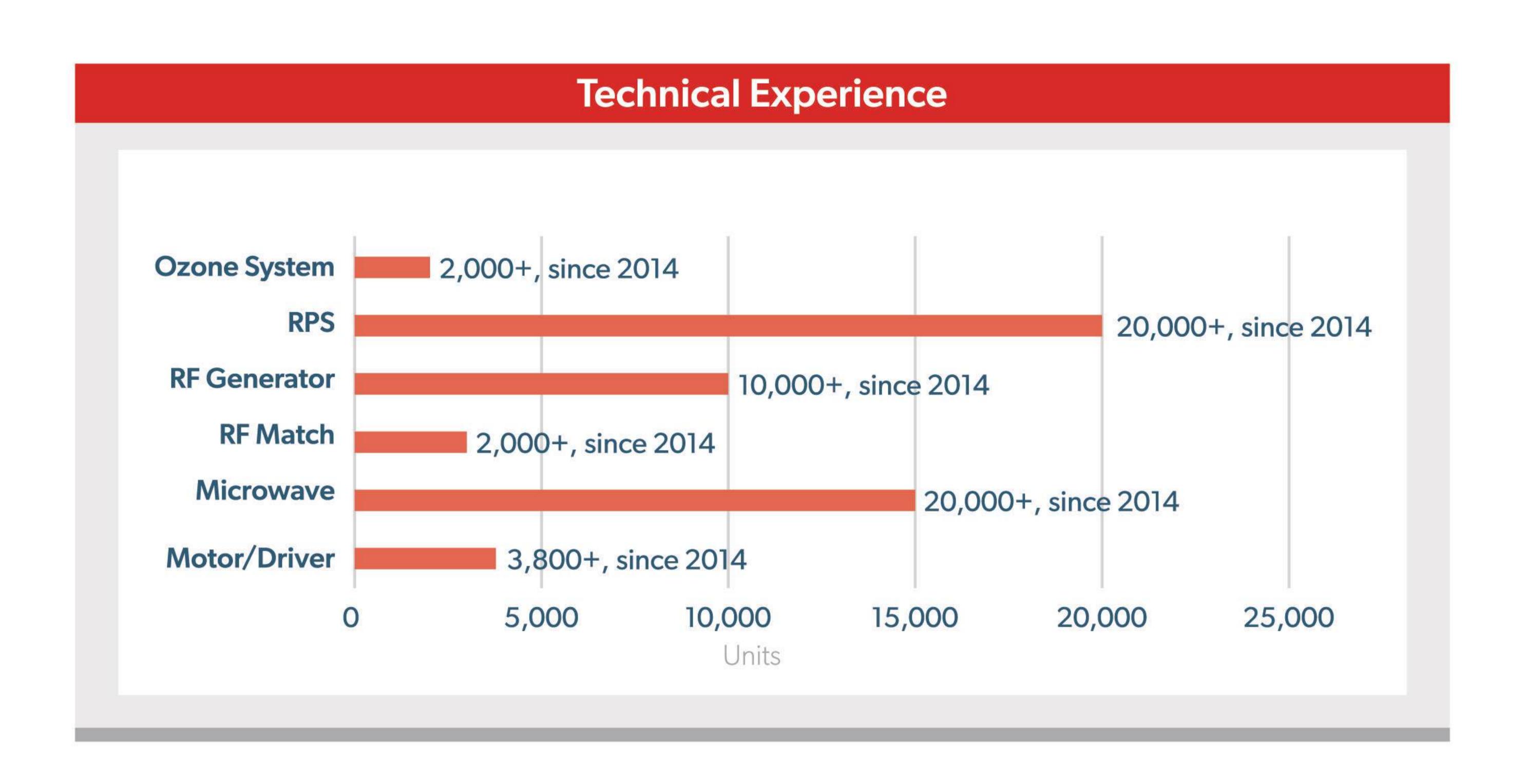


PRODUCT REPAIR / REFURBISHED SERVICES

Restore, Renew and Re-birth

With experiences collected through every piece we received; we develop our in-house verification method. Our extensive technical expertise covers all service areas, including

- Power RF/MW/DC
- Ozone Generator
- RPS (Remote Plasma Source)
- Motor/Driver
- Endpoint System
- E Chuck (Electrostatic Chuck)



By offering comprehensive support to our customers, Finesse Technology continually develops and innovating ourselves to meet industry demands

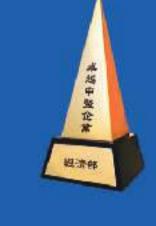


Our Goal Fulfillment and Value Recognition

Ranked 63rd out of top 100 fast growing companies in Taiwan in 2019



Taiwan Mittelstand Award, granted by the Ministry of Economic Affairs (Taiwan) in 2021



D-U-N-S® Certified



TUV NORD ISO 9001 ISO 14001 ISO 45001



SEMI S2 Certification



Annual Outstanding Supplier



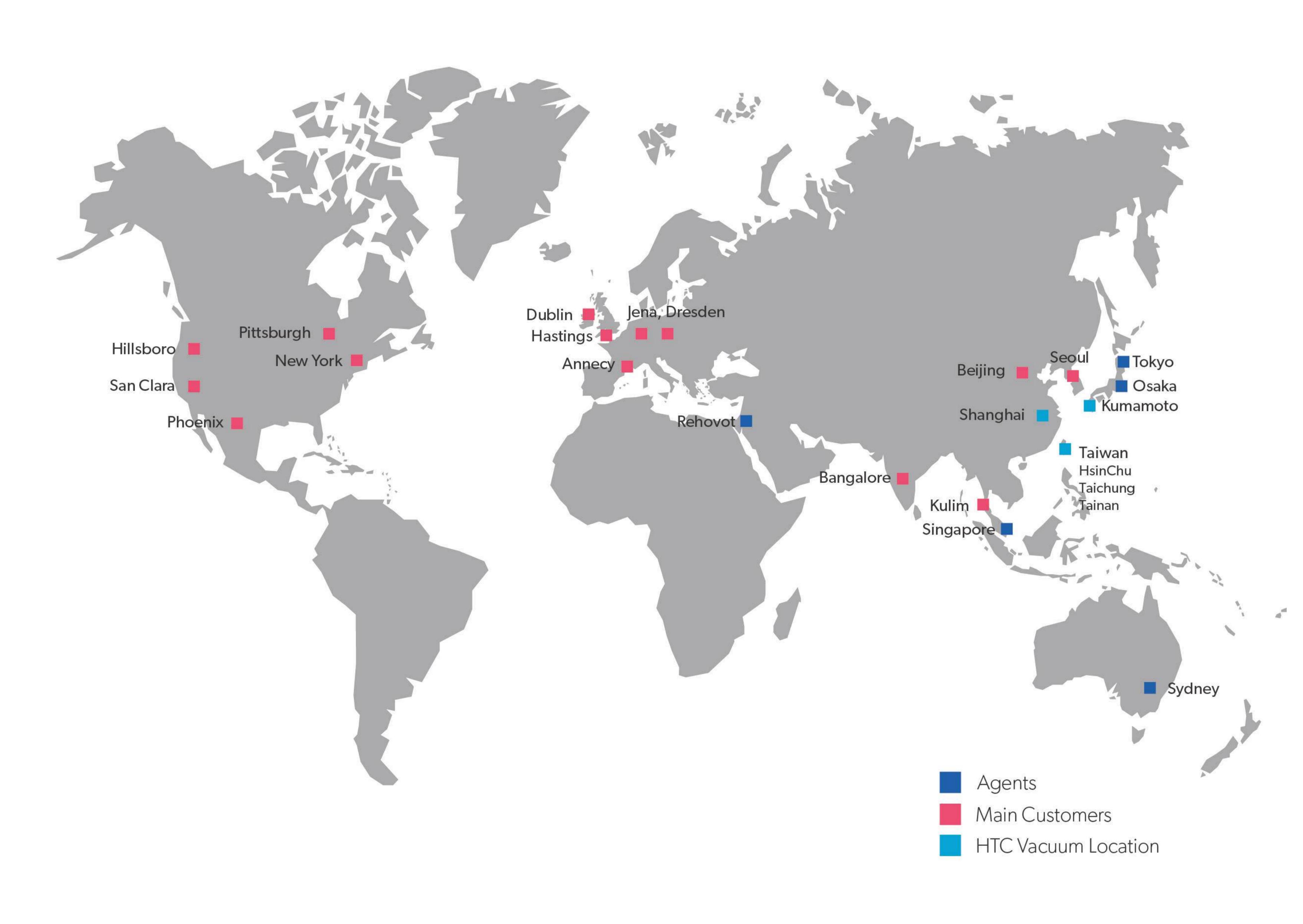
Excellent EHS Management Contractor
Annual Finest Equipment Supplier



Member of Responsible Business Alliance



Htc Global Sites and Major Clients



From design and manufacturing to verification, we work closely with our global customers to meet their expectations.

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