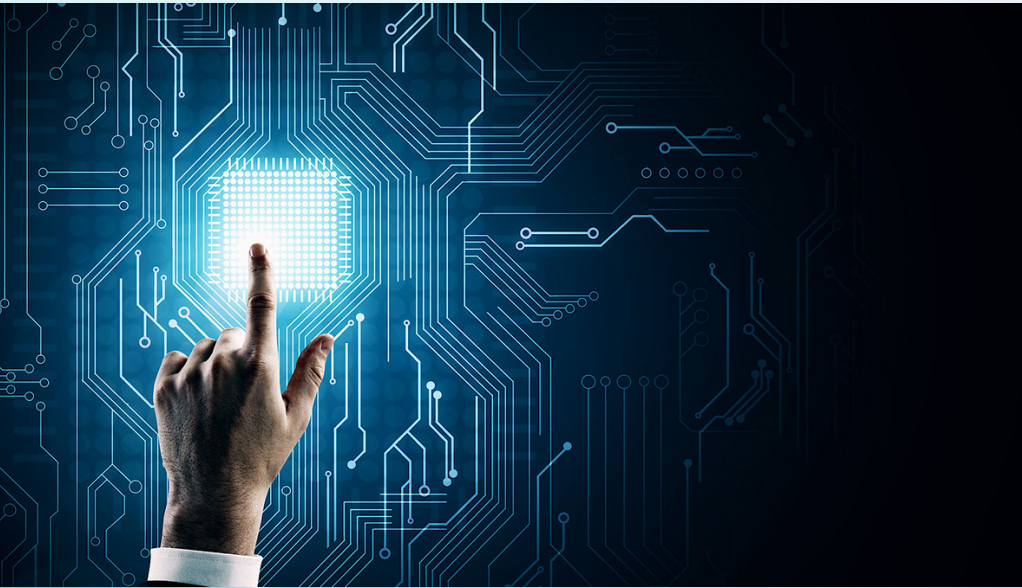


Semiconductor Manufacturing Solution



Precision technology that advances your design.

**Here is where the semiconductor
machinery of the future begins.**

The Advantages of KOGANEI Technology

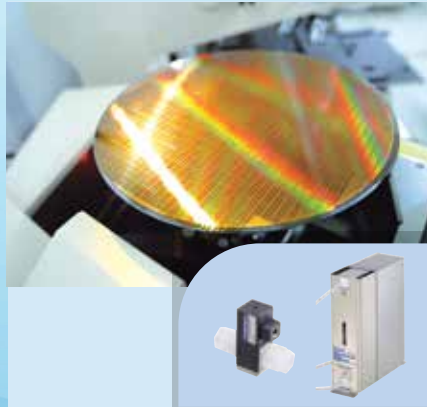
	Miniaturization		Accuracy and Repeatability		Unique Performance		Longer Life	
V A L V E S	PTFE / PFA Pure Process Valves 	F-AVPN070 Fluoropolymer Valves 	PTFE / PFA Suck-Back Valves 	KFPV Series Proportional Flow Valves 	005 Series Micro Valves 	iB-Flow Series Digital Flow Controls 	F Series Valves and Manifolds 	PVR Series Media Isolation Valves 
	High Chemical Compatibility	High Flow in Small Envelope	Precision Volume Control	Repeatable to $\pm 2\%$ F.S.	5.9 mm Width	Stepper Driven Needle Valve	100+ Million Cycles	10 Million Cycles
	A C T U A T O R S	CS-BC Series Compact Cylinders 	CS-MGA Series Mini Guide Sliders 	MGA Series Mini Guide Sliders 	AC Series Air Bearing Cylinder 	TBDA Series Twin Rod Guided Actuator 	NCT Series Bernoulli Grippers 	BC Series Compact Cylinders 
ISO Class 5 Equivalent		ISO Class 5 Equivalent	$\pm 0.0002''$ Running Parallelism	Extremely Low Friction	Low Speed Option Down to 1 mm/s	Handle Wafers w/o Surface Contact	15 Million Cycles	10 Million Cycles
O T H E R S		KSHC Series Shock Absorbers 	PTFE / PFA Fittings and Tubing 	PRS100 Series Precision Regulators 	TubePhragm Dispense Pumps 	PFA Anti-Static Tubing 	DTY-EPS01 Series Electrostatic Sensors 	DTY-ELF14 Fan Type Ionizers 
	Silicon-Free, ISO Class 5 Equivalent	High Chemical Compatibility	± 0.15 psi Sensitivity	$\pm 0.1\%$ Full Scale Accuracy	Conductive Surface to Dissipate Charge	24/7 Monitoring	No Routine Needle Maintenance	3 Million Cycles

Optimized designs with a variety of sizes and styles to fit almost any application.

KOGANEI parts in applications.

Front End Process Applications

- Silicon Substrate Processing
- Oxidation and Nitride Film Deposition
- Photoresist Coating
- Exposure
- Development
- Etching
- Ashing / Cleaning
- Dielectric Film Formation (CVD)
- Planarization (CMP)
- Gate Dielectric Film Formation / Gate Electrode Formation (CVD, PVD)
- Patterning
- Ion Implantation / Annealing
- Internal Dielectric Film Formation (CVD) / Planarization (CMP)
- Contact Formation (CVD, PVD)
- Interconnect Formation (CVD, PVD, CMP)
- Probe Testing



Photoresist Coating Equipment

Challenge: Reducing the waste of expensive photoresist materials while maintaining high speed throughput. At the same time generating the lowest amount of contamination and requiring the least maintenance.

Solution: Our patented **F-EPT Series** Tubephragm pump and **F-AVPN070** Fluoropolymer valves provided excellent photoresist dispensing repeatability, low contaminate generation, and the least required maintenance, all while maximizing our customer's profitability.



CVD Equipment

Challenge: Decreasing the installation space required by the pneumatic solenoid valve manifolds that control the system valves for the high vacuum chamber.

Solution: At only 5.9 mm wide, our **005 Series** direct acting solenoid valves offered the smallest footprint and lightest weight manifolds, allowing the customer to meet their design criteria.



Wafer Cleaning Equipment

Challenge: Reducing the risk of fire caused by an Electrostatic Discharge (ESD) event due to transporting Ultrapure Water (UPW) through insulative Fluoropolymer (PFA) tubing.

Solution: Our Anti-Static **PFA** tubing has a conductive material on the surface that provided a ground connection point and eliminated the possibility of an ESD event.



Back Grinding Equipment

Challenge: Reducing quality issues caused by unstable water flow at the cleaning nozzle during the wafer rinse process.



Solution: Our *KFPV Series* low hysteresis proportional control valve enabled tighter control of the water pressure to the cleaning nozzle, providing the customer with the stability needed to resolve their quality issues.



Die Bonding Equipment

Challenge: Minimizing damage to expensive tooling and other components due to crashing and vibration caused by incorrect machine set-up of the high-speed electric actuators.



Solution: Our *KSHJ Series* linear orifice shock absorbers were installed as emergency stops at the end of stroke of each actuator, dissipating the energy caused by the accidental crashing, and preventing damage to the critical components.



IC Testing Equipment

Challenge: Decreasing the frequency and duration of production stops required to maintain ionizers by measuring their performance and cleaning when compromised due to environmental contamination.



Solution: Our long life, self-cleaning *DTY-ELF14HC* fan type ionizers and *DTY-EPS01* electrostatic sensors provided 24/7 performance monitoring and enabled a much longer maintenance interval, drastically reducing the customer's costs and down-time.

Back End Process Applications

- Dicing
- Back Grinding
Tape Laminating
- Back Grinding
- Die Bonding
- Wire Bonding
- Molding
- Trimming /
Forming
- Burn-in Testing
- IC Testing
- Marking



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