KOGANEI

https://www.koganeiasia.com

Koganei Parts In Various Technologies

Electronics Manufacturing Solutions

KOGANEI parts in applications

Electronics Manufacturing Applications

- Surface Mount Technology (SMT)
- Reflow
- Screw Tightening
- Soldering
- PCB Cutting
- Mechanical Testing
- Electrical Testing
- Packaging
- Ink-Jet Coating (Flat Panel Display)
- Cleaning
- Shock Absorbing

Video Game Test Equipment

Challenge: Developing the compact, long-life pneumatic equipment necessary to test the durability and endurance of video game controllers.

Solution: Our miniature, high-performance ***PBDA Series*** pen cylinders exceeded the customer's critical life cycle requirement, out-lasting similar components from other manufacturers.

OLED (Organic Light-Emitting Diode) Ink Jet Printing Equipment

Challenge: Preventing degradation of the chemical solution due to the inevitable heat generated by the solenoid valves used in dispense process.

Solution: We developed an air operated version of our ***PVR Series*** media isolation valve and paired this with our micro 3-way solenoid valve. This enabled the electrical component to be isolated from the dispense process, resolving the customer's heat issue.

HDD (Hard Disk Drive) Assembly Equipment

Challenge: Maximizing the life of shock absorbers used in the cleanroom environment while preventing the introduction of oil and particulate contaminants due to their general leakage and failure.

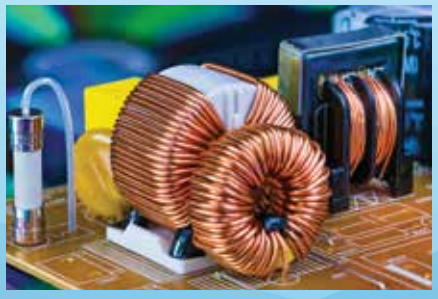
Solution: Our ***KSHC Series*** cleanroom shock absorber with integrated particle pocket and oil scatter prevention filter eliminated the customer's contamination issues, while its high-performance, linear orifice design provided excellent life expectancy.

- Pick & Place
- Conveying
- Inserting
- Lifting
- Pushing
- Clamping
- Film Peeling / Laminating (Flat Panel Display)
- Painting
- Assembling
- Part Feeding
- Part Sorting

Solar Cell Pick & Place Equipment

Challenge: Reducing inaccuracies during cell handling caused by undesirable shifting and flexing normally associated with small pneumatic actuators.

Solution: Our ***BCG Series*** compact, precision guided cylinders provided the customer with the load capability and rigidity comparable to larger bore cylinders but within the envelope of their existing component, allowing them to improve performance without increasing footprint.



Magnetic Components (Inductors, Transformers) Assembly Equipment

Challenge: Adjusting the range of motion of assembly machinery quickly and precisely to simplify switching between workpieces of different thicknesses.

Solution: We modified the end of stroke adjustment mechanism on our ***MGA Series*** precision guided actuator so that operator could hold it more easily while tightening the adjustment bolt, saving them valuable time during their product changeover.

Car Audio System Assembly Equipment

Challenge: Maintaining the various ionizers required to prevent particle accumulation and Electro-Static Discharge (ESD) events, despite having limited in-house expertise and inadequate supplier support.

Solution: We conducted an ESD audit to evaluate the customer's ***DTY-ELF Series*** current ionizer implementation and provided field training and technical support to improve their maintenance process, enabling them to save time and related costs.

The Advantages of KOGANEI Technology

	Miniaturization		Accuracy and Repeatability		Unique Performance		Longer Life	
VALVES	**005 Series** Micro Valves	**F-AVPN070** Fluoropolymer Valves	**PVR Series** Media Isolation Valves	**KFPV Series** Proportional Flow Valves	**iB-Zero Series** Valve Manifolds	**iB-Flow Series** Digital Flow Controls	**F Series** Valves and Manifolds	**K Series** High Speed Valves
								
	5.9 mm Width	High Flow in Small Envelope	Low 35 µl Dead Volume	Repeatable to ±2% F.S.	Fast, Simple Assembly	Stepper Driven Needle Valve	100+ Million Cycles	Up to 1 Billion Cycles
ACTUATORS	**PBDA Series** Pen Cylinders	**MBDA Series** Mini Bit Cylinders	**MGA Series** Mini Guide Sliders	**AFDPG Series** Flat Grippers with Guides	**MRV Series** Rodless Cylinders	**NHL Series** L-Hand Grippers with Guides	**BC Series** Compact Cylinders	**BCG Series** Guided Actuators
								
	from 2.5 mm Bore	from 4.5 mm Bore	±0.0002" Running Parallelism	Minimal Finger Backlash	Low Speed to 8 mm/s	Superior External Gripping Force	15 Million Cycles	10 Million Cycles
OTHERS	**RN100 Series** Pressure Regulators	**PME Series** Inline Vacuum Generators	**PRS100 Series** Precision Regulators	**EW2H Series** Electric Grippers	**PAU** Air Conservation Pulse Units	**DTY-ELF14** Fan Type Ionizers	**iB-Cyclone** Air Line Water Separators	**KSHP Series** Shock Absorbers
								
	23 mm Square Body	from 8.5 mm Diameter and 0.5 mm Nozzle	±0.1 5 psi Sensitivity	Positioning Accuracy ±0.05 mm	Reduces Air Use by up to 50%	No Routine Needle Maintenance	No Filter Element to Replace	3 Million Cycles

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

Medical & Life Science Equipment

Advanced applications powered by KOGANEI.

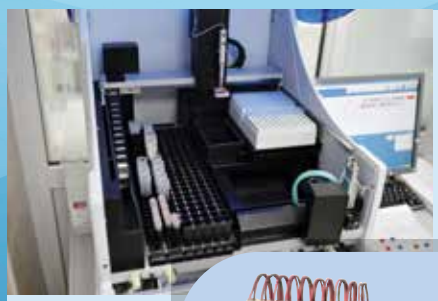
Life Science Applications

- Automated Liquid Handling
- Automated Liquid Sampler
- Automated Sample Preparation
- Flow Cytometry
- Gas Chromatography
- Liquid Chromatography
- Molecular Diagnostics
- Immunoassays Analyzers
- Clinical Chemistry Analyzers
- Microbiology Analyzers
- Hematology Analyzers
- Urinalysis Analyzers
- Emission Analysis
- GMO Analysis
- Air/Water Quality Analysis
- Mass Spectrometry
- Capnography Monitor

Genetic Analyzer

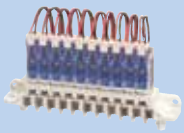
Challenge: Moving the test sample through the fluidics card while maintaining consistent pressures to the flow paths with no leakage.

Solution: Our ***G010 Series*** low leak solenoid valves controlled the pressure signals, ensuring the system didn't experience any pressure loss throughout the life of the device.



Cell Secretion Analyzer

Challenge: Controlling up to 150+ flow paths while maintaining the smallest footprint possible and reducing the possibility of leaks and assembly errors.



Solution: Our ***005 Series*** micro solenoid valve manifold met the performance and envelope requirements. Providing the complete sub-assembly ensured accurate and fast installation.

Immunoassays Analyzer

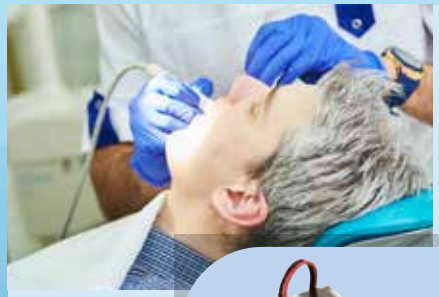
Challenge: Keeping the control for the microfluidic cartridge membrane valves small, simple, and easy to install. (Competitive solutions were too large and highly complex.)

Solution: Our fully-integrated, custom solution using ***MBDA Series*** actuators and ***005 Series*** valves kept the system complexity to a minimum, reduced potential leak points, and streamlined overall installation.

Clinical Sterilization Equipment

Challenge: Maintaining a precise level of clean, dry compressed air in a small, efficient assembly while sourcing parts from multiple suppliers.

Solution: Utilizing the breadth of our product line and compact compressed air treatment components, including our ***FDH Series*** membrane dryer, we provided a complete assembly that met the required filtration and dew point levels.



Endodontic Device

Challenge: Finding compact, high-flow, and quiet operating fluid control valves for mixing and dispensing of the proprietary fluid.

Solution: Through a modification to the solenoid on our ***PVR Series*** media isolation valve, we provided a custom assembly that met the OEM's application requirements while sufficiently reducing operating noise.

Respiratory Equipment

Challenge: Finding a solenoid valve small and lightweight enough to be easily mounted and plumbed directly on a PCB. The valve also needed to allow high flow with low air leakage for quick and consistent calibration of the system sensors.

Solution: At only 5.9 mm wide, our ***005 Series*** high-flow, low-leak micro 3-way valve was easily mounted onto the circuit board, and its built-in barb fittings allowed for quick pneumatic connections.

Medical Applications

- Deep Vein Thrombosis
- Alternating Pressure Mattresses
- O2 Concentrator
- Negative Wound Therapy
- Root Canal Device
- Anesthesia Delivery
- Clinical Sterilizers
- Endoscopy
- O2 Conserver
- Ventilator
- Cataract Surgery
- Blood Pressure Monitoring
- Lasik Surgery
- Microdermabrasion
- Cardiovascular Assist
- Capnography Monitor
- CO2 Insufflators
- Dialysis Machine
- Chrysotherapy Therapy Device

Portability and performance for patients and physicians.

The Advantages of KOGANEI Technology

	Miniaturization		Accuracy and Repeatability		Unique Performance		Longer Life	
VALVES	**005 Series** Micro Valves	**F-AVPN070** Fluoropolymer Valves	**PVR Series** Media Isolation Valves	**KFPV Series** Proportional Flow Valves	**iB-Zero Series** Valve Manifolds	**iB-Flow Series** Digital Flow Controls	**F Series** Valves and Manifolds	**K Series** High Speed Valves
								
	5.9 mm Width	High Flow in Small Envelope	Low 35 µl Dead Volume	Repeatable to ±2% F.S.	Fast, Simple Assembly	Stepper Driven Needle Valve	100+ Million Cycles	Up to 1 Billion Cycles
ACTUATORS	**PBDA Series** Pen Cylinders	**MBDA Series** Mini Bit Cylinders	**MGA Series** Mini Guide Sliders	**AFDPG Series** Flat Grippers with Guides	**MRV Series** Rodless Cylinders	**NHL Series** L-Hand Grippers with Guides	**BC Series** Compact Cylinders	**BCG Series** Guided Actuators
								
	from 2.5 mm Bore	from 4.5 mm Bore	±0.0002" Running Parallelism	Minimal Finger Backlash	Low Speed to 8 mm/s	Superior External Gripping Force	15 Million Cycles	10 Million Cycles
OTHERS	**RN100 Series** Pressure Regulators	**VLF Series** In-Line Air Filters	**PRS100 Series** Precision Regulators	**EW2H Series** Electric Grippers	**FME Series** Vacuum Ejectors	**FDH Series** Membrane Dryers	**iB-Cyclone** Air Line Water Separators	**KSHP Series** Shock Absorbers
								
	23 mm Square Body	from 13 mm Diameter with 5 µm Filtration	±0.1 5 psi Sensitivity	Positioning Accuracy ±0.05 mm	Quiet Operation <50 dB	Prevents Moisture in Air Lines	No Filter Element to Replace	3 Million Cycles

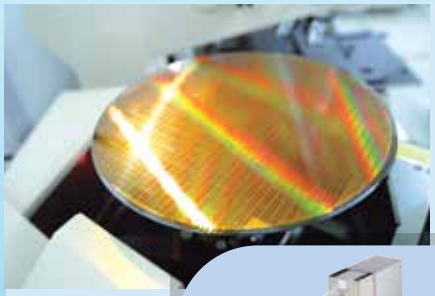
Optimized designs with a variety of sizes and styles to fit almost any application.

Semiconductor Manufacturing Solution

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



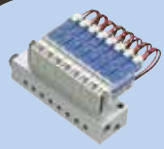
Photoresist Coating Equipment

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

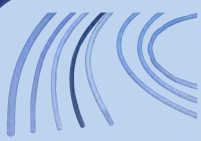
Challenge: Decreasing the installation space required by the pneumatic solenoid valve manifolds that control the system valves for the high vacuum chamber.



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

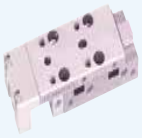
Challenge: Decreasing the frequency and duration of production stops required to maintain ionizers by measuring their performance and cleaning when compromised due to environmental contamination.

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

The Advantages of KOGANEI Technology

	Miniaturization		Accuracy and Repeatability		Unique Performance		Longer Life	
VALVES	**PTFE / PFA** Pure Process Valves  **High Chemical Compatibility**	**F-AVPN070** Fluoropolymer Valves  **High Flow in Small Envelope**	**PTFE / PFA** Suck-Back Valves  **Precision Volume Control**	**KFPV Series** Proportional Flow Valves  **Repeatable to ±2% F.S.**	**005 Series** Micro Valves  **5.9 mm Width**	**iB-Flow Series** Digital Flow Controls  **Stepper Driven Needle Valve**	**F Series** Valves and Manifolds  **100+ Million Cycles**	**PVR Series** Media Isolation Valves  **10 Million Cycles**
ACTUATORS	**CS-BC Series** Compact Cylinders  **ISO Class 5 Equivalent**	**CS-MGA Series** Mini Guide Sliders  **ISO Class 5 Equivalent**	**MGA Series** Mini Guide Sliders  **±0.0002" Running Parallelism**	**AC Series** Air Bearing Cylinder  **Extremely Low Friction**	**TBDA Series** Twin Rod Guided Actuator  **Low Speed Option Down to 1 mm/s**	**NCT Series** Bernoulli Grippers  **Handle Wafers w/o Surface Contact**	**BC Series** Compact Cylinders  **15 Million Cycles**	**BCG Series** Guided Actuators  **10 Million Cycles**
OTHERS	**KSHC Series** Shock Absorbers  **Silicon-Free, ISO Class 5 Equivalent**	**PTFE / PFA** Fittings and Tubing  **High Chemical Compatibility**	**PRS100 Series** Precision Regulators  **±0.15 psi Sensitivity**	**Tubephragm** Dispense Pumps  **±0.1% Full Scale Accuracy**	**PFA** Anti-Static Tubing  **Conductive Surface to Dissipate Charge**	**DTY-EPS01 Series** Electrostatic Sensors  **24/7 Monitoring**	**DTY-ELF14** Fan Type Ionizers  **No Routine Needle Maintenance**	**KSHP Series** Shock Absorbers  **3 Million Cycles**

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

Agriculture & Farm Automation

KOGANEI parts in applications

Rice Sorter

Challenge: Finding pneumatic valves with fast switching times that are highly repeatable and can provide sufficient air flow to eject the defective product, yet small enough to fit multiple units into a single machine.

Solution: Our ***K2 Series*** high-speed valve achieved a flow rate of 0.11 Cv with response times of 0.5 ms ON and 1.0 ms OFF, all within a compact 10 mm wide body, allowing us to mount 50 valves onto a custom manifold assembly.

Dairy Equipment

Challenge: Ensuring that the control components used in process equipment are capable of withstanding the harsh environments and cleaning agents.

Solution: Our ***TAC Series*** of manual and mechanical pneumatic valves and accessories are nickel plated for high corrosion resistance and provided basic pneumatic logic and control functions across multiple applications.

Produce Tumble Washing Equipment

Challenge: Redesigning a control cabinet to reduce overall size without sacrificing custom valve manifold functionality or the ability to easily assemble and perform maintenance.

Solution: Our versatile ***F Series*** valve manifolds could be configured to provide the customer's required functionality using standard components and were easily installed and plumbed in a smaller envelope than their predecessors.

Agriculture and Farm Automation

- Planting
- Harvesting
- Packing
- Processing
- Conveying
- Pesticide Spraying
- DNA / GMO Analysis
- Sort Gates
- Iodine Spraying Control
- Sequencing Gates
- Neck Rail Gates
- Hoof Care Dispense Systems
- Rice Sorting
- Fruit / Vegetable Sorting

The Advantages of KOGANEI Technology

	Miniaturization		Accuracy and Repeatability		Unique Performance		Longer Life	
VALVES	**005 Series** Micro Valves	**F-AVPN070** Fluoropolymer Valves	**PVR Series** Media Isolation Valves	**KFPV Series** Proportional Flow Valves	**iB-Zero Series** Valve Manifolds	**iB-Flow Series** Digital Flow Controls	**F Series** Valves and Manifolds	**K Series** High Speed Valves
								
	5.9 mm Width	High Flow in Small Envelope	Low 35 µl Dead Volume	Repeatable to ±2% F.S.	Fast, Simple Assembly	Stepper Driven Needle Valve	100+ Million Cycles	Up to 1 Billion Cycles
ACTUATORS	**PBDA Series** Pen Cylinders	**MBDA Series** Mini Bit Cylinders	**MGA Series** Mini Guide Sliders	**AFDPG Series** Flat Grippers with Guides	**MRV Series** Rodless Cylinders	**NHL Series** L-Hand Grippers with Guides	**BC Series** Compact Cylinders	**BCG Series** Guided Actuators
								
	from 2.5 mm Bore	from 4.5 mm Bore	±0.0002" Running Parallelism	Minimal Finger Backlash	Low Speed to 8 mm/s	Superior External Gripping Force	15 Million Cycles	10 Million Cycles
OTHERS	**RN100 Series** Pressure Regulators	**Air Picker** Rubber Hand Grippers	**PRS100 Series** Precision Regulators	**EW2H Series** Electric Grippers	**PAU** Air Conservation Pulse Units	**DTY-ELF14** Fan Type Ionizers	**iB-Cyclone** Air Line Water Separators	**KSHP Series** Shock Absorbers
								
	23 mm Square Body	from 8 mm Diameter	±0.1 5 psi Sensitivity	Positioning Accuracy ±0.05 mm	Reduces Air Use by up to 50%	No Routine Needle Maintenance	No Filter Element to Replace	3 Million Cycles

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

Clean Room System

The Advantages of KOGANEI Technology

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Beverage & Packaging Equipment

KOGANEI parts in applications

Food, Beverage and Packaging

- Bottle Forming
- Bottle Filling
- Food Cutting
- Picking and Placing
- Packaging
- Conveying
- Ingredients Analysis
- Case Erectors
- Palletizing
- Case Packers
- In-line Pouch Sealers
- Vertical Form Fill Sealers
- Labeling
- Case Sealers
- Automatic Filling
- PET Bottle Blowing
- Capping
- Volumetric Filling
- Depalletizing
- High Speed Picking
- Stretch Wrapping
- Vacuum Sealing

Automated Bag Filling Equipment

Challenge: Increasing throughput on an automated bag filling line without completely restructuring the process or redesigning machinery.

Solution: The customer was using vacuum cups to open the bags, requiring the line to stop for each fill. By replacing these with our ***NCT Series*** Bernoulli grippers, we were able to open and fill the bags while they were still in motion, eliminating wasted cycle time.

Bottle Handling Equipment

Challenge: Delicately handling bottles of various sizes and shapes without requiring complex fixtures or time consuming end effector changes.

Solution: Our ***Air Gripper Series*** with inflatable rubber bladder allowed our customer to gently grip and transport bottles having different neck diameters using a single device.

Plastic Cap Transport Equipment

Challenge: Simplifying the transport of plastic bottle caps that push one another out of their storage bins due to the repulsive electrostatic force they develop during the process.

Solution: We reviewed the customer's transfer line and installed our ***DTY-BA11*** bar type ionizers to neutralize the electro-static charge on the caps before they entered the storage bins.

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Material Handling Warehouse Automation

KOGANEI parts in applications

Pallet Stop Assemblies

Challenge: Prolonging the life of stopping mechanisms designed to handle the high loads and cycle counts associated with pallet conveyors.

Solution: We analyzed the customer's failed shock absorbers and developed a drop-in replacement using our ***KSHJ Series*** with linear orifice design, extending the life of their equipment and reducing warranty claims.

Drop Bin Slide Gates

Challenge: Designing an compact, long-stroke drive assembly capable of the high forces required to quickly open and close the slide gates at the bottom of package sortation drop bins.

Solution: The oval piston of our ***ORV Series*** rodless cylinders generated the necessary actuation force in a low profile package, enabling the customer to easily mount the system within their space constraints.

Sliding Shoe Sorters

Challenge: Developing an actuation system for sliding shoe sorter diverters that is fast, highly repeatable and has a long life expectancy.

Solution: Our ***KDV Series*** high-speed actuator package provided the ideal combination of a robust, low-friction, compact cylinder with an integrated, direct acting poppet valve, yielding up to 30 million cycles.

Material Handling and Warehouse Automation

- Conveying
- Linear Tilt Tray Sorters
- Sliding Shoe Sorters
- Pop-Up Sorters
- Linear Arm Sorters
- Pusher Sorters
- Kicker Cylinders
- Pallet Stops
- End of Arm Tooling (EOAT)
- Storage and Retrieval
- Stacking
- Machine Loading
- Part Transferring
- Bulk Material Handling
- Paddle Sorters
- Gravimetric Feeders
- Garment On Hanger Sortation Systems
- Gravimetric Blenders

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ACTUATORS	**PBDA Series** Pen Cylinders	**MBDA Series** Mini Bit Cylinders	**MGA Series** Mini Guide Sliders	**AFDPG Series** Flat Grippers with Guides	**MRV Series** Rodless Cylinders	**NHL Series** L-Hand Grippers with Guides	**BC Series** Compact Cylinders	**BCG Series** Guided Actuators
								
	from 2.5 mm Bore	from 4.5 mm Bore	±0.0002" Running Parallelism	Minimal Finger Backlash	Low Speed to 8 mm/s	Superior External Gripping Force	15 Million Cycles	10 Million Cycles
OTHERS	**RN100 Series** Pressure Regulators	**PME Series** Inline Vacuum Generators	**PRS100 Series** Precision Regulators	**EW2H Series** Electric Grippers	**PAU** Air Conservation Pulse Units	**DTY-ELF14** Fan Type Ionizers	**iB-Cyclone** Air Line Water Separators	**KSHP Series** Shock Absorbers
								
	23 mm Square Body	from 8.5 mm Diameter and 0.5 mm Nozzle	±0.1 5 psi Sensitivity	Positioning Accuracy ±0.05 mm	Reduces Air Use by up to 50%	No Routine Needle Maintenance	No Filter Element to Replace	3 Million Cycles

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

KOGANEI

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