Flokal® gas systems

Issue 1-March 2004

We are ISO 9001: 2000 certified

Flokal® gas systems

- Flokal® offers high quality customized gas systems!
- Valves
- Base blocks
- Features
- Sample IGS configurations

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ABOUT US

FLOKAL® - the ultimate resource for:

- **MFC's** accessories - **Valves** & Accessories - **Gas-systems** & Accessories;
- **Thermo-elements** (spike and profile)
- Gas/Liquid Filtration and Purification & Accessories
- **Vacuum** measure and control devices

Flokal® offers high quality customized gas systems!

Based on the concept of improved performance and easy maintenance, the Flokal Integrated Gas System is designed to meet the needs of next generation semiconductor gas distribution in process equipment, tool hookups and valve manifold boxes.

- Easter dry down and purge cycles, no dead space or entrapment all result in more uptime of process tools;
- Top access to both components and base blocks also means less downtime for maintenance.

The compact size of the Flokal IGS will contribute to the overall reduction in tool footprint in the cleanroom. Applying the same compact design to VMBs reduces energy costs associated with exhaust venting of the enclosures. Gas system design time is reduced by using simple base block configurations and Flokal's two- and three-way valves. A lower number of standard blocks and components reduces inventory and spare parts costs to users.

The W-Seal

Flokal W-Seal interface offers superior performance where reliability and safety are needed most in UHP semiconductor process gas delivery systems. Made of 316L Stainless Steel the W-Seal gasket has a proven track record of providing leak free connections in weldless gas lines. Only 50 kgf cm of torque are required to form a seal. Under test conditions, we have achieved a leak rate of 2.9x1015 Ace/sec.

W-Seal components and our unique base blocks are manufactured with a heat treated sealing bead to more easily deform the gasket when tightened. Using a gasket and counterbore with the same inner diameter means no dead space or particle entrapment.

Moving from welded to weldless gas systems requires an increased emphasis on sealing technology. With thousands of metal seals replacing welded connections in the fab the sealing technology is crucial to ensuring the safety of workers and the efficiency of the manufacturing process. To further ensure the safety of these weldless systems, the W-Seal gasket now comes with a Guide Ring. This device adds an additional level of protection against scratches to the sealing surface of the gasket.

Valves

Flokal offers both Manual V> Turn and Air-Operated Valves with two and three ports. The Air-Operated Wives are available with either Normally Open, or Normally Closed Actuators.

The Equipment Manufacturer and the End User has unequaled performance in both extraordinarily low particle generation (0.0042 particles per cycle average at 0.01mm) and cycle life (tested to 4,000,000 cycles). Other gas components needed to construct the Flokal's IGS are available in the row of Flokal production.

Base Blocks

The Flokal design demands that all Base Blocks shall be top mounted onto the panel plate with no

beneath plate fasteners, for ease of maintenance.

- The Manifold Block is used to cross connect for purging and venting. The Standard Base Block connects in line system compoments (valves, filters, transducers, etcetera).

- Manifold Block Valve (shown with two pneumatic actuators) allow a purge line to be connected to the top of the block This integrated design reduces the total number of seals.

Applying the same compact design of the Flokal IGS to VMBs reduces energy costs associated with exhaust venting of the enclosures. For higher flow applications like VMB's, Flokal offers our Mega-One line and 2- and 3-port air-operated valves.

Why choose the Flokal IGS and W-Seal?

- 100% Top-Mounting
- Reduced Number of Sealing Fbints
- Highly Configurable
- Only One W-Seal Gasket Type Required

Flokal's Base Block design allows top access to all components and substrates. Clamping tools and through bolts are not required to assemble a gas stick based on this design so maintenance time is greatiy reduced. The number of sealing points is lowered by utilizing a V-shaped flow path through the substrate.

Components can be easily removed and repositioned as system layouts are altered. While other substrate manufacturers require several types of gaskets for component or side mount connections, the Flokal design uses only one type of W-Seal gasket thus simplifying assembly, maintenance and reducing inventory.

IGS is a truly modular technology using single-position blocks to mount the active components for process tool gas systems and facility-wide gas distribution systems (VMBs, GIBs, etc). IGS was specifically designed to address the need of the semiconductor industry to continually reduce cost, size and cycle time while improving performance and reliability.

With only 14 standard stainless steel machined IGS blocks of three basic types: substrate, manifold and end-cap/bridge, any gas system configuration can be built using surface mount components. Manifold blocks that provide a flow path between two or more parallel gas sticks attach to the bottom of the substrate blocks and reduce the jungle of weldments, jumpers and bridges.

IGS uses the popular SEMI PR 3.1 compliant C-seal interface between the substrate blocks and the surface-mount components. Major tool and wafer manufacturers prefer the C-seal interface. All major suppliers of valves, regulators, transducers, filters and MFCs offer C-seal surface-mount components. IGS meets or exceeds the performance of conventional gas systems such as critical standards for moisture challenge, oxygen contribution, shock and vibration, stress and sealing. IGS wetted surface area is typically reduced by 40%, resulting in faster dry-down: from a zero PPB baseline, tests conducted under SEMI guidelines document system recovery times in 30% less time than welded gas systems after a 2 PPM moisture challenge. IGS typically eliminates 90% of welds, resulting in lower particle counts and higher corrosion resistance.

IGS systems are designed faster than conventional systems using our GasWare™ software application that automatically engineers the gas system from the flow schematic. GasWare allows engineers to construct the flow schematic using intuitive drag and drop icons and generates the bill of material, the quotation and the Pro/E solid model of the gas box, based on customer and code specifications.

IGS makes reconfigurations fast and easy. With IGS, limited scope reconfigurations can be done in-situ with little or no disturbance to the existing gas panel. IGS makes it particularly easy to add new gases and sticks because IGS reconfigurations typically require minimum engineering, fewer special components and fewer extra weldments. To perform stick additions or changes, the VersaPlane* mounting hardware saves the customer from intrusive tasks like drilling and tapping to the backplane.

Standardization of the components to the SEMI PR 3.1 surface mount standard and the small number of IGS substrate, manifold and end-cap/bridge blocks, combined with the ease of reconfiguration of IGS lead to significant reduction in inventory.

The versatility of IGS requiring limited engineering for specials, coupled with standardized components and significantly reduced welding requirements greatly reduces gas systems development and manufacturing cycle times.

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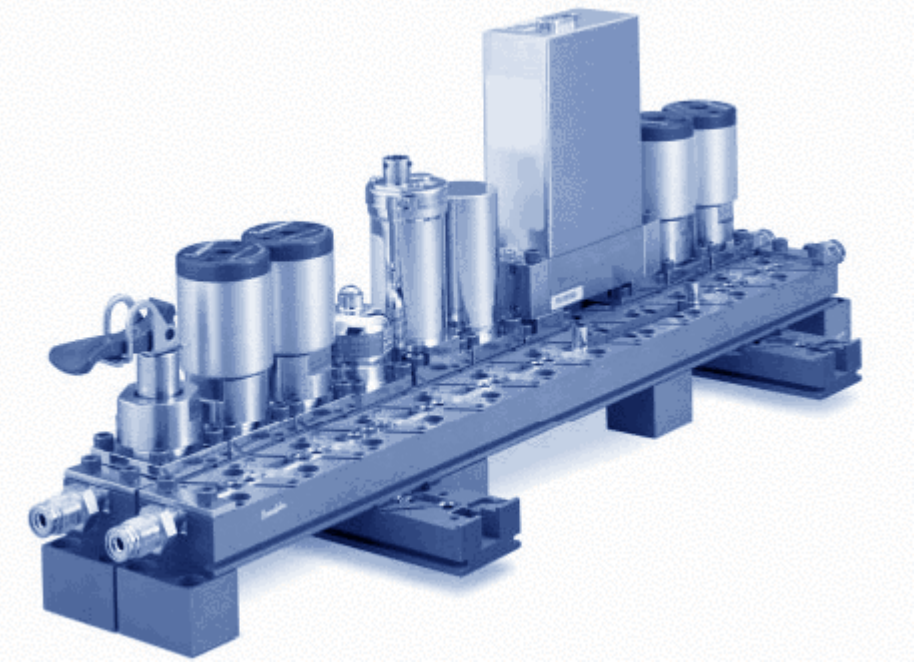

The IGS modular design permits quick, inexpensive and weldless assembly of gas systems, cutting down manufacturing time by up to 50%. The superior leak integrity reduces lengthy leak testing procedures. Last minute customer changes can be accommodated without extensive delays.

IGS reduces the footprint of a typical gas system by up to 50%, freeing up some valuable real estate in next generation process tools. A smaller gas system can also be located closer to the chamber, reducing the pneumatic lag and the process time while improving performance. Reduction in footprint means reduction in exhaust and gas detection requirements, saving up to 35% in facility gas systems installation.

IGS makes it fast and easy to change a faulty component and to diagnose a gas system, getting the tool back in production faster. When process requirements dictate a change in component or in functionality of the gas system, IGS simplifies the process and greatly reduces the amount of reconfiguration time.

A typical IGC system consists of three layers - a substrate assembly, a manifold assembly, and mounting components. The manifold and substrate assemblies are combined to form the conduit for the system gas, and can be customized for any flow configuration. The IGC components are assembled with simple mounting components and standard hardware. The IGC system accepts any SEMI-PR3.1 compliant surface mount component. The IGC System Configurator. MS-21-22. is available on CD ROM to simplify the layout, selection, and ordering of IGC components.

Features

Improve Basic Technology: safety and Clean Technology;
Miniaturization: use of UPG & W-Seal Technology; reduce Size of Actuator (35mm to 25mm);
Increase Reliability: use of UPG & W-Seal Technology;
Simple to Make & Maintain: all Top Mount Components; uniform Connections; easier to Heat;
Promote Standardization: full Line-up of Standard Components; standardize Design & Assembly with Flexibility; reduce Leadtime with Standard Parts;
Cost Reduction: reduced Overall Cost Through Standardization, increased Reliability, and Ease of Assembly.

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- **Sample IGS configurations**

IGS PANEL WITH FCS. FCS (Flow control system) is a high perfomance prefilter, regulator, pressure transducer, and MFC in one compact package that reduces the size of assemblies by one third. Available in analog and digital versions.

IGS PANEL FOR GAS SUPPLY SYSTEMS. VMB (Valve Manifold Box) allows for more efficient use of cleanroom space.

ULTRA-COMPACT IGS (1,125"). Next generation ultra-compact IGS based upon the 1,125" footprint. Gas panels are smaller and lighter without sacrificing flow capacity.

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For the process industry

- Gas / liquid flow measurement & display
- Temperature measurement & display
- Pressure measurement & display
- Valve positioners & control valves
- Level measurement & display
- Turbidity measurement & display
- Humidity measurement & display
- Accredited calibrations (flow, temperature, pressure, level)
- Process Analytical solutions
- Automation and Software
- Flow meters

For the pharmaceutical industry

- Cryotechnology
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- Automation and Software

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