

Environmental Initiatives by Our Suppliers

The Tokyo Electron Group collaborates with its suppliers to reduce the environmental impact of its products. The following describes the initiatives taken by two of our suppliers to reduce environmental impact.

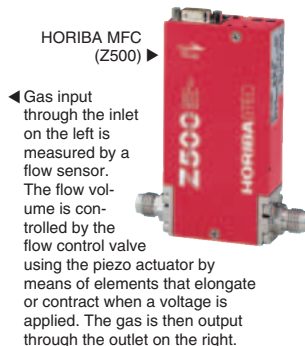
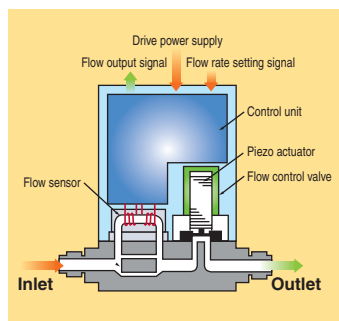
Environmental Efforts at Our Suppliers—HORIBA, Ltd. and HORIBA STEC, Co., Ltd.

HORIBA, Ltd. and HORIBA STEC, Co., Ltd.

HORIBA, Ltd. and HORIBA STEC, Co., Ltd. (referred to collectively as "HORIBA") have been constantly expanding their business as measurement device manufacturers and are currently engaged in the following four business segments: automotive test systems business; analytical business; medical diagnostic business; and semiconductor business. HORIBA mainly supplies mass flow controllers (MFC*) for use in semiconductor/FPD production equipment to the Tokyo Electron Group. HORIBA has the world's top market share for MFCs.

* MFC: A variety of gases and liquids are used in the manufacture of semiconductors. MFCs are used to accurately control the flow volume of these substances. MFCs perform important functions in semiconductor production equipment, and the quality and productivity of the entire semiconductor manufacturing process largely depends on the performance and quality of the MFCs.

Internal Structure of an MFC



Establishing an Integrated Management System

HORIBA established an Integrated Management System (IMS) for quality and environmental management based on ISO standards, and an occupational health and safety management system based on OHSAS 18001. These functioned separately until June 2004. HORIBA plans to expand the IMS to its group companies.

Approach to the RoHS Directive

HORIBA is working to meet the requirements for RoHS correspondence for its MFCs, in response to requests from its customers including the Tokyo Electron Group and to regulatory trends in Europe.

In 2004, HORIBA started using lead-free printed boards in the manufacture of its MFCs and in 2006 discontinued the use of substances regulated under the RoHS Directive in its new products. At present, HORIBA is working to meet the requirements for correspondence for its existing products. Lead-free production lines are completely separated from conventional production lines that use lead, and even the tools and jigs used

for the two types of lines are kept completely separate. HORIBA inspects samples of the products it procures from suppliers with its own analyzers to check for the use of regulated substances in the products.



▲ Analysis on receiving products from suppliers



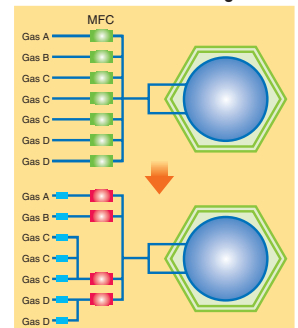
▲ Lead-free soldering production line

Environmental Contribution of MFCs in the Semiconductor Manufacturing Process

HORIBA contributes to reducing the environmental impact caused by the overall semiconductor manufacturing process through its MFCs, whose functions have been improved in response to the RoHS Directive. Specifically, HORIBA's MFCs contribute to a higher semiconductor yield with more precise flow control and to higher productivity and lower gas consumption through their high responsiveness at all flow volumes. In addition, HORIBA's multi-gas and wide-range MFCs can be used regardless of the gas type and flow volume, and Tokyo Electron Group is now examining their use for its products.

(Conventional MFCs can be used only for a specified gas type and flow volume, and so multiple MFCs must be used, with one MFC each for gas type and flow volume.) The use of multi-gas and wide-range MFCs enables us to reduce the number of MFCs needed and reduce the electricity consumed by the controller.

Decrease in the Number of Lines Due to the Use of Wide-Range MFCs



Comments from TEL

In the future, the importance of optimizing the use of process gases will increase and will be the key to conserving resources and energy and bringing higher productivity to the entire semiconductor manufacturing process. We anticipate that HORIBA will be able to help us with this optimization by the use of its analysis and flow volume control technologies.

Environmental Efforts by Our Suppliers—YDK Co., Ltd.

YDK Co., Ltd.

YDK Co., Ltd. designs and manufactures information communication devices and semiconductor production equipment. It is also engaged in the work of cutting parts for precision machines.

YDK includes YDK Mechatronics Tohoku Plant and YDK Communications in Tono City, Iwate Prefecture (YDK Iwate District). The Tokyo Electron Group started to commission the processing of parts used in its thermal processing systems manufactured at its own Tohoku Plant to YDK in 1982. At present, we commission the processing of parts, design of equipment, cutting of parts, and assembly of automatic device units to YDK. Also, YDK designs gas controllers as a contractor at our Group's Tohoku Plant and also dispatches its employees to our manufacturing sites. YDK is therefore both a supplier and a cooperating company for our Group. At our briefing session on manufacturing trends held in April 2007, YDK Iwate District was commended by our Tohoku Plant for its high quality unit assembly and drastic improvement in achieving its deadlines.



▲ Certificate of commendation from Tokyo Electron Group

Establishing an Environmental Management System

In response to the increase in its responsibilities to society for environmental problems, YDK obtained ISO 14001 certification in November 2003. As one of its environmental activities, the company has introduced packaging materials that can be reused repeatedly and the reuse of rental waste cloth. It is also replacing the fluorescent lamps at its facilities with inverter-type lamps and reducing the amount of paper used. In FY 2008, YDK will conduct environmental activities in a way that is more integrated with its business activities.



▲ Waste cloth collection box for reuse

Lead-Free Soldering and Response to the RoHS Directive

After Tokyo Electron Group conducted a survey on lead-free soldering in September 2003, YDK Iwate District began to train lead-free soldering trainers following instructions from our Group. Subsequently in February 2006, they started lead-free soldering. YDK Communications in YDK Iwate District attaches "RoHS-compliant" labels to identify its printed boards and other

products that comply with the RoHS Directive. YDK will press forward with its discontinuance project for total discontinuance of substances regulated by the Directive in its products including units and assemblies in response to requests from Tokyo Electron Group.



▲ RoHS-correspondence label

Higher Productivity and Improvement Proposals

YDK's basic policies are (1) to conduct detailed self-checks to reduce the number of defective products and (2) regard those engaged in the next process steps as in-house "customers." Based on these policies, the company is actively making improvements and increasing its productivity through mechanization, review of the line layouts for the assembly of units and the production of assemblies, and the adoption of a "street stand system," in which only the necessary tools are placed on a stand for each step in the unit assembly work.

In July 2007, YDK introduced a new production system, which allowed the company to check order reception and the manufacture of products and parts on PCs. This helps the company reduce unnecessary stock and wasteful operations.

YDK is also proactive in making improvement proposals using our Group's Value Engineering (VE) proposal form which leads to cost reduction and improvements in quality and productivity for both YDK and Tokyo Electron Group.

Safety Measures

YDK is committed to conducting safety activities, upholding their motto to "abide by rules to ensure safety" and "make a bright workplaces with no accidents." It holds monthly meetings of its health and safety committee, conducts disaster risk assessments, and gives safety-related education and enlightenment to employees to achieve zero workplace accidents.



▲ YDK's manufacturing site

VE proposal form to be used by suppliers



Comments from TEL

YDK willingly cooperated with us in introducing lead-free soldering. We also anticipate YDK implementing measures to comply with the RoHS Directive. Proposals from YDK will help us make improvements so that we manufacture better products.