

## HORIBA STEC Products for Semiconductor Manufacturing Process

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HORIBA STEC, Co., Ltd., marketed the purely domestic Mass Flow Controller (hereinafter referred to as “MFC”) for the first time in Japan in 1980. After that, the SEC-400 series and SEC-4400 series of MFCs were released, and their performance and quality were recognized by customers of semiconductor manufacturing tool manufacturers and semiconductor device manufacturers all over the world. So far, we have continuously developed and commercialized MFCs required in semiconductor processes. Today, semiconductor process-related products offered by HORIBA STEC Co., Ltd., are not only limited to MFCs but are also used in the measurement and control of flow, pressure, and concentration around process chambers. To provide solutions to customers, the number of products we offer as modules and subsystems, as well as parts and components, is increasing.

In order to respond to the miniaturization and integration of semiconductors, customers expect higher performance in our products from year to year, and

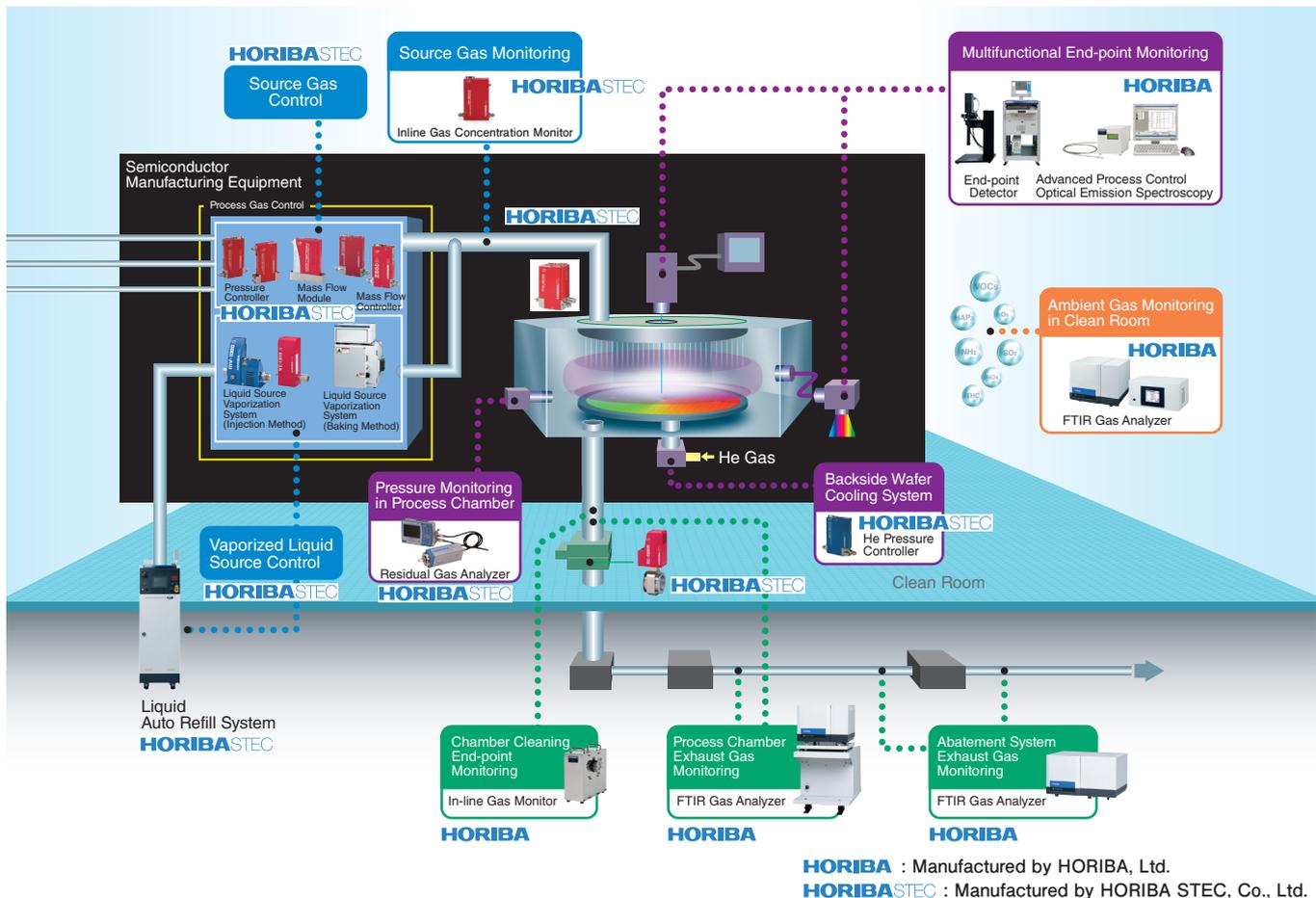


Figure 1 HORIBA Group products for semiconductor

their demands for quality and reliability are getting higher. In particular, the reduction in the variation in product quality is the most important. As represented by terms such as “Wafer to Wafer,” “Tool to Tool,” and “Fab to Fab,” the most important aspect is ensuring the same performance and quality in different devices at different places and on different occasions. In addition, unexpected shutdown of the device leads to the loss of customers’ opportunities, which is directly connected to customer benefits. In choosing HORIBA STEC’s products, high reliability and robustness are important factors.

To meet such stringent market demands, HORIBA STEC Co., Ltd., has established its Global R&D system. In addition to the Kyoto Headquarters, Kyoto Fukuchiyama Technology Center, and the Reno office of HORIBA Instruments as development bases, collaborating with the HORIBA Advanced Technology Center established a system where products with high performance and quality could be continuously researched and developed using core technologies. In addition, engineers are dispatched from the Development Office to our bases in the United States, Taiwan, and Korea to gather customer opinions directly so that we can create products that are closer to the ones they really want. We believe the strength of HORIBA STEC, Co., Ltd., is that we can offer products and associated comprehensive services by securing sufficient production capacity to meet customer needs and by offering services to customers at our globally developed bases promptly, in addition to the Global R&D system.

The miniaturization of the semiconductor process entered a field called single nano, and the film formation and etching performances are discussed at an atomic layer level in the processes such as ALD (Atomic layer deposition) and ALE (Atomic layer etching). In order to meet such stringent process requirements, HORIBA STEC Co., Ltd., continues to make efforts day by day as a solution provider that can provide added value to customers by utilizing the experience cultivated in the field of MFC globally.

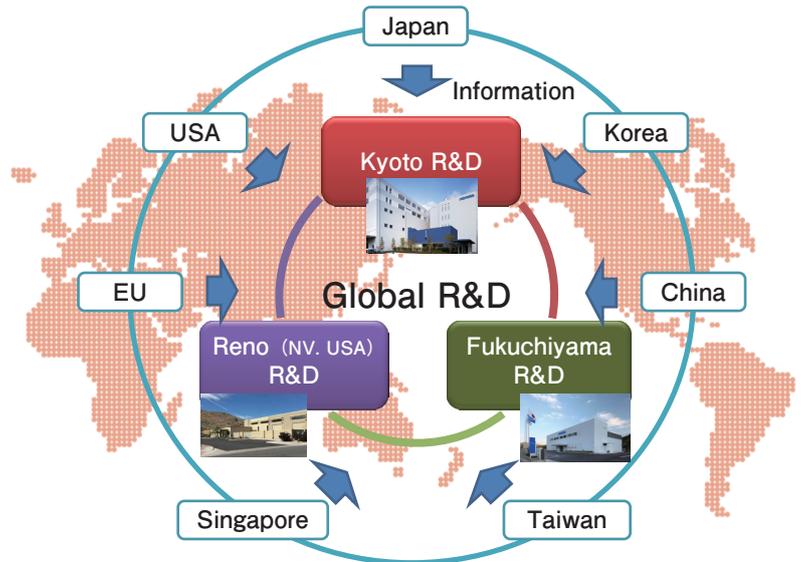


Figure 2 HORIBA STEC Global R&D



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