

Notice of the Start of Mass Production with the Expansion of the Photolithography Process Clean Room at Tokushima Production Division

Daishinku Corporation (President: Minoru Iizuka) is pleased to announce the expansion of the clean room space for photolithography processing*¹ at the Tokushima Production Division to meet increasing demand for products that require such processing of crystal wafers, with the start of mass production in June 2022

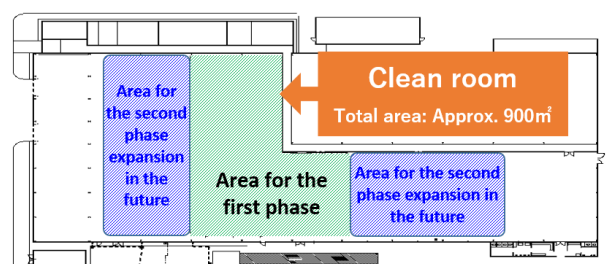
With the expansion of 5G/IoT technology and products, the speed and capacity of data communications are increasing. Amid this situation, the importance of high-frequency, high-precision, and high-stability timing devices is growing; further expansion of the market of quartz devices, essential devices in this field, is expected. With an increasing need for high-density mounting along with more high- and multi-functional final products, the downsizing of quartz devices is also in demand. Our product lineup offers many compact devices including the 1008-size Arkh.3G series.*² To achieve high frequency, high accuracy, and high stability with these compact devices, photolithography processing of crystal blanks is indispensable. To date, we have performed this process at the Tottori Production Division. However, to meet increasing demand for products that require photolithography processing and to strengthen our resilience under the business continuity plan (BCP), we have increased the clean room floor space for photolithography processing at the Tokushima Production Division.

The new clean room will be furnished with equipment compatible with 4-inch wafers, increasing our production volume of crystal blanks by about 1.7 times compared to the equipment for 3-inch wafers. In addition, to further enhance our core technology to handle larger wafer formats, we designed the equipment to be able to support 6-inch wafers in the future. The number of crystal blanks producible from a 6-inch wafer is double that from a 4-inch wafer.

This is part of the efforts to achieve our 10-year long-term management plan “OCEAN+2 Strategy.”*³ By starting mass production at the Tokushima Production Division, our production volume of photolithography type crystal blanks combining both plants will double the previous volume. We will continue responding to the growing market by further expanding our mass production capacity and planning the second-phase expansion of clean room space at Tokushima Production Division.

<Clean room>

- Location: Tokushima Production Division
- Floor area: Approx. 900 m²
- Production starts from June 2022



[Definition of terms]

*1 Photolithography processing:

This is the process of producing crystal blanks from quartz wafers by using photolithography and etching techniques. Finer processing is possible compared to machining, and it is indispensable for downsizing and increasing the frequency of quartz devices.

*2 Arkh.3G series:

This is a quartz device produced with a new structure adopting a wafer-level package (WLP) technique. Three layers of crystal-based wafers are bonded by using fine seal technology, our proprietary joining technology, without using the ceramic package and conductive adhesive that is used for conventional products. In addition, the adoption of a wafer level package (WLP) technique can reduce the footprint of manufacturing equipment, double the productivity per floor area, and reduce energy consumption, including utility costs, compared to the conventional production technique. The downsizing and thinning of products can lead to a reduction in packaging materials and thus the energy required for transportation. The products are environmentally friendly from various aspects.

*3 OCEAN+2 strategy:

This is our 10-year, long-term management plan formulated on the occasion of the 60th anniversary of our foundation in November 2019.