## Ceramics processing

(1) Cutting technology
   Established fine-cutting techniques with wire saws and slicing machines for high accuracy.

(2) Grinding technology
   Achieving circularity, cylindricity, and flatness of hard and brittle material at sub-micron level.

(3) Polishing technology
   Capable of processing components to the nanometer level which require extremely flat planes with no surface roughness.

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</table>
| Hole making              | Ceramic, Ruby etc. | Hole diameter Φ0.07~Φ4.00 (±0.002)mm | Accuracy of hole
   · Dimensions
   · Concentricity
   · Cylindricity
   · Cylindricality
   Roughness of hole surface | <Zirconia Capillary> |
| Hole polishing           | Ceramic, Ruby etc. |                           |                                              | <Alumina sleeve> |
| Cylindrical shape        | Ceramic, Ruby etc. | Φ0.5~Φ10.0 (±0.001)mm     | Accuracy of cylindrical shape
   · Dimensions
   · Circularity
   · Cylindricity          | <Zirconia pin gauge> |
| centerless grinding      |                  |                           |                                              |                               |
| Plane surface            | Crystal, Ceramic, Glass etc. | Thickness of wafer 0.03~0.1 (±0.002)mm (at wafer size 10mm square) | Accuracy of Thickness | <Crystal wafer> |
| processing                |                  |                           |                                              |                               |
| Lapping                  |                  |                           |                                              |                               |
| Polishing                |                  |                           |                                              |                               |
| Cutting                  | Crystal, Glass   | Thickness of wafer Φ0.1~10 (±0.005)mm (at wafer size 20mm square) | Small machining allowance
   Flatness                   | <Crystal wafer> |
| Wire saw                 |                  |                           |                                              |                               |

**note** Please inquire details separately.

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**CITIZEN FINEDEVICE CO., LTD.**

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