

## DISCO Products and Links to Society

Bringing Comfort  
to the World

**Kiru**  
**Kezuru**  
**Migaku**

Digital devices like cell phones and digital cameras have gotten so small in recent years they now fit in the palm of your hand, while their functionality and performance continue to improve. Use of IC cards and IC tags has also grown more widespread over the past few years. When riding public transit, when out shopping: they can be seen everywhere these days.

Technology for making the semiconductors and electronic components used in these end products small and thin is indispensable to making the products themselves compact, thin and highly functional.

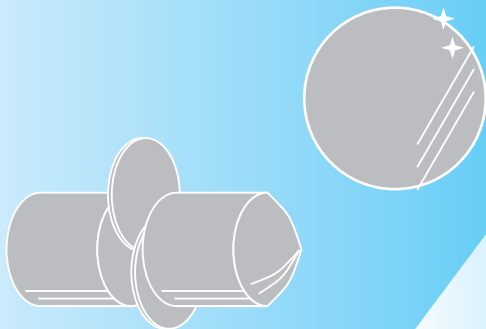
DISCO has continuously developed advanced *Kiru*, *Kezuru*, and *Migaku*\* technologies in an unbroken chain dating back to our founding. This section takes a look at these technologies and how they are connected to comfortable living from the perspective of the semiconductor manufacturing process, our current main area of business.

\* We express our core technologies in the Japanese words of *Kiru* = Cutting, *Kezuru* = Grinding, and *Migaku* = Polishing and are striving to have our technology become the global standard

### Semiconductor Manufacturing Process

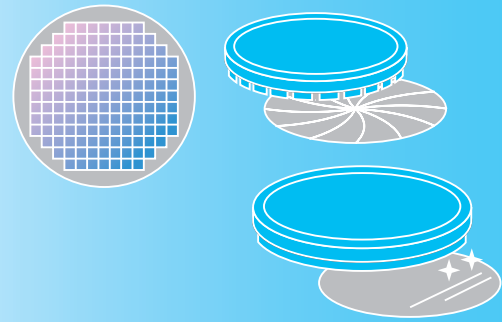
#### <Wafer manufacturing process>

Process for manufacturing silicon wafers, the substrate material used for semiconductors



#### <Semiconductor manufacturing front-end process>

Processes for making semiconductor die by forming circuits on the substrate wafer



#### DISCO

Grinders are used to thin wafers cut from silicon ingots. As semiconductors have become thinner and more highly functional, the precision of flatness in the thinning process has become important.



**Kezuru**

The backside of the wafer is ground (in a process called backgrinding) in order to thin it while protecting the circuit on the front side. End products like cell phones and computers have become even thinner thanks this process.



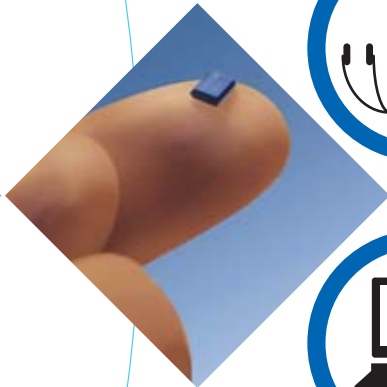
**Kezuru**

Damaged layers may be removed in order to improve the strength of the thinned wafers (stress relief). Responding to recent trends of thinner final products, demand for stress relief is increasing.



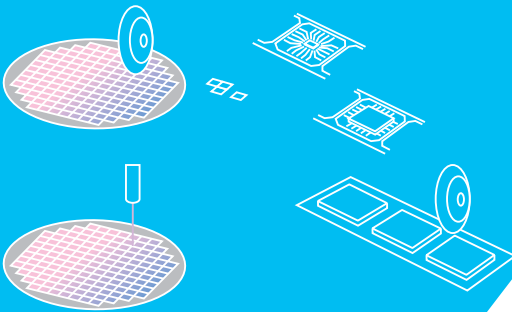
**Migaku**

Technologies for making the semiconductors contained in end products small and thin are indispensable to making the products themselves compact, thin and lightweight. Moreover, when semiconductors are small and thin, it makes it possible to pack more information into the same amount of space, which enables the end products to include greater functionality. DISCO's mission in society is to continue to help make the world a pleasant, comfortable place by pursuing advanced *Kiru*, *Kezuru* and *Migaku* technologies and making everyday products even more convenient.



### <Semiconductor manufacturing final assembly process>

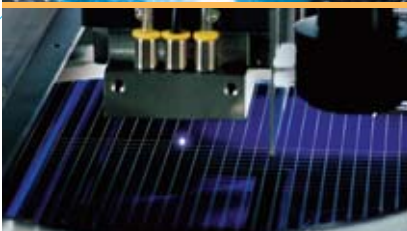
Processes for assembling semiconductor die. After being cut into individual die, the die are wired and encapsulated in resin.



Semiconductor die are cut from the thinned wafers in a process called dicing. In addition to conventional blade dicing, dicing technologies that use lasers have been increasingly utilized in recent years.



DISCO equipment is also used in the package singulation process after the die have been encapsulated in resin.



**Kiru**