HORIZONTAL GRINDING MACHINE SGM-7000A (Automatic measuring system type)

SHUWA INDUSTRY COMPANY LIMITED

Machine Capability

(1) Material

SiC, Si, GaAs, GaN, AlN, Glass, Sapphire, LT,
LN, Quarts, Alumina, Resin, Metal etc..

(2) Wafer Capability

φ2”×5,　φ3”×3,　φ4”×1,　φ6”×1

(3) Substrate Plate

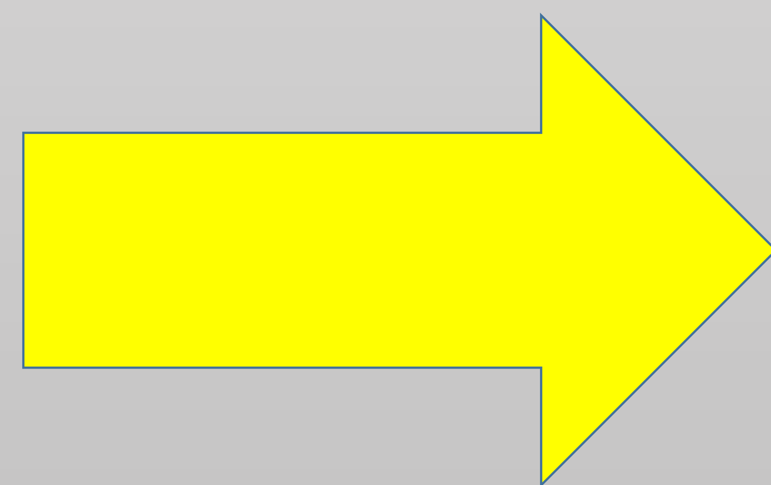
Material: Alumina Ceramics, Glass etc..

Size: ～φ150mm （Optional: φ200mm ）

※Porous chucking is optional

End User Needs

- Want to process a solid and fragile materials
- Want to reduce a polishing time
- Want to do processing without chipping and cracking
- Want to get a competitive grinding machine
- Want to get a more compact size one.



SGM-7000A Solution!

Machine Outline

・External Appearance

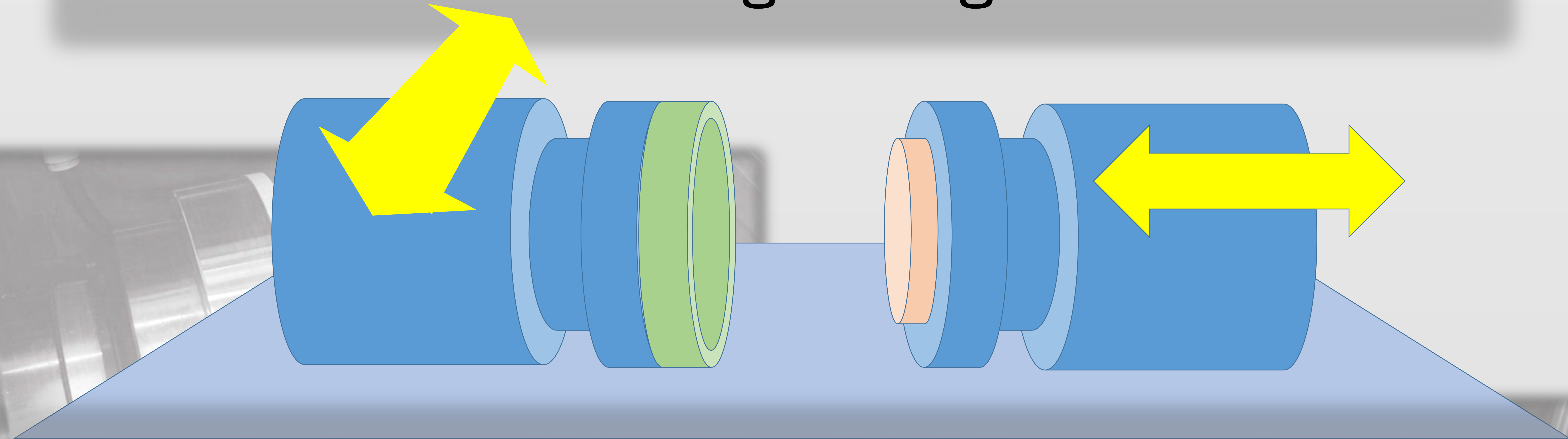
・Opening processing area

Machine Outline

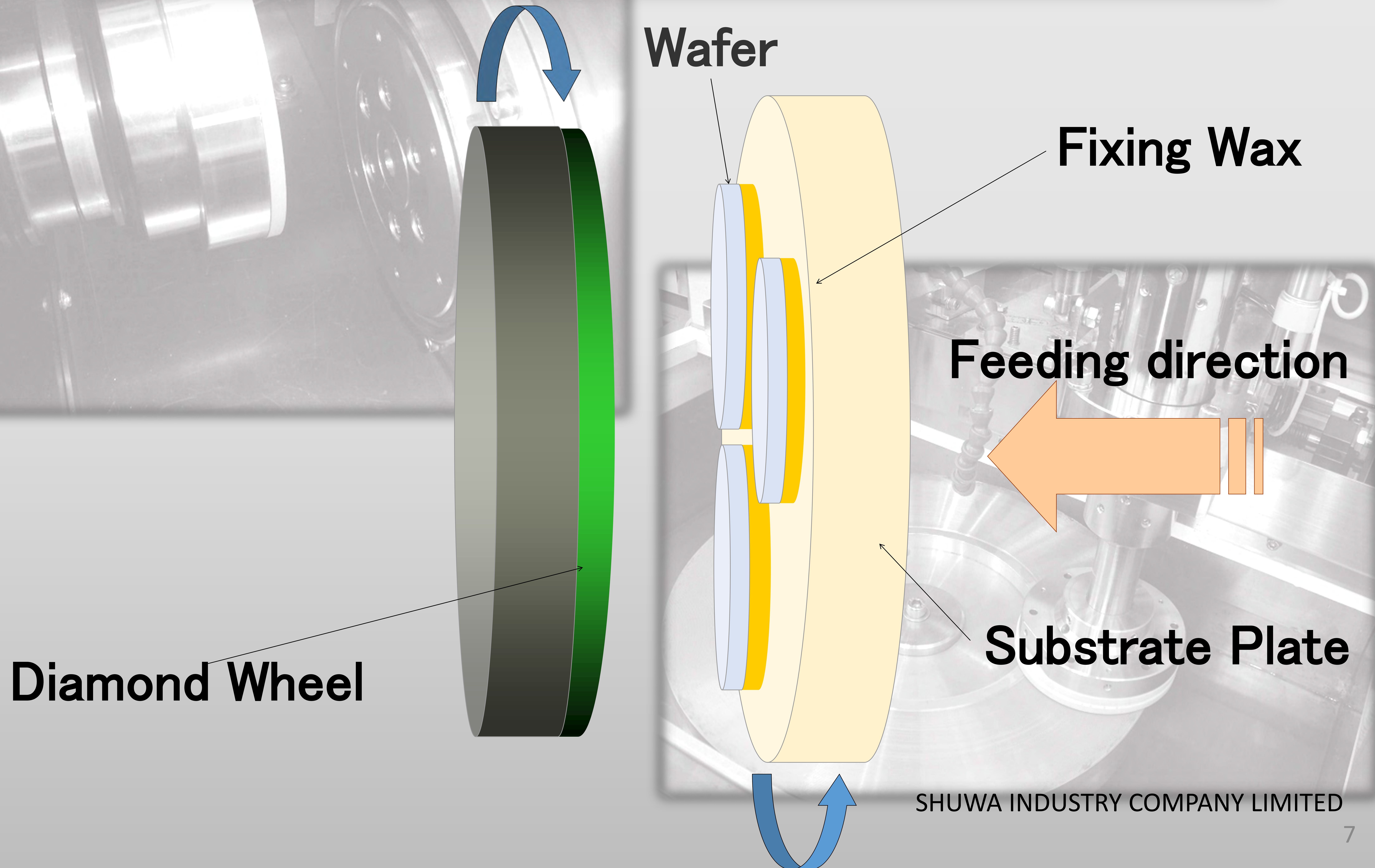
- Processing room

- Measuring probe

“Horizontal ” grinding features



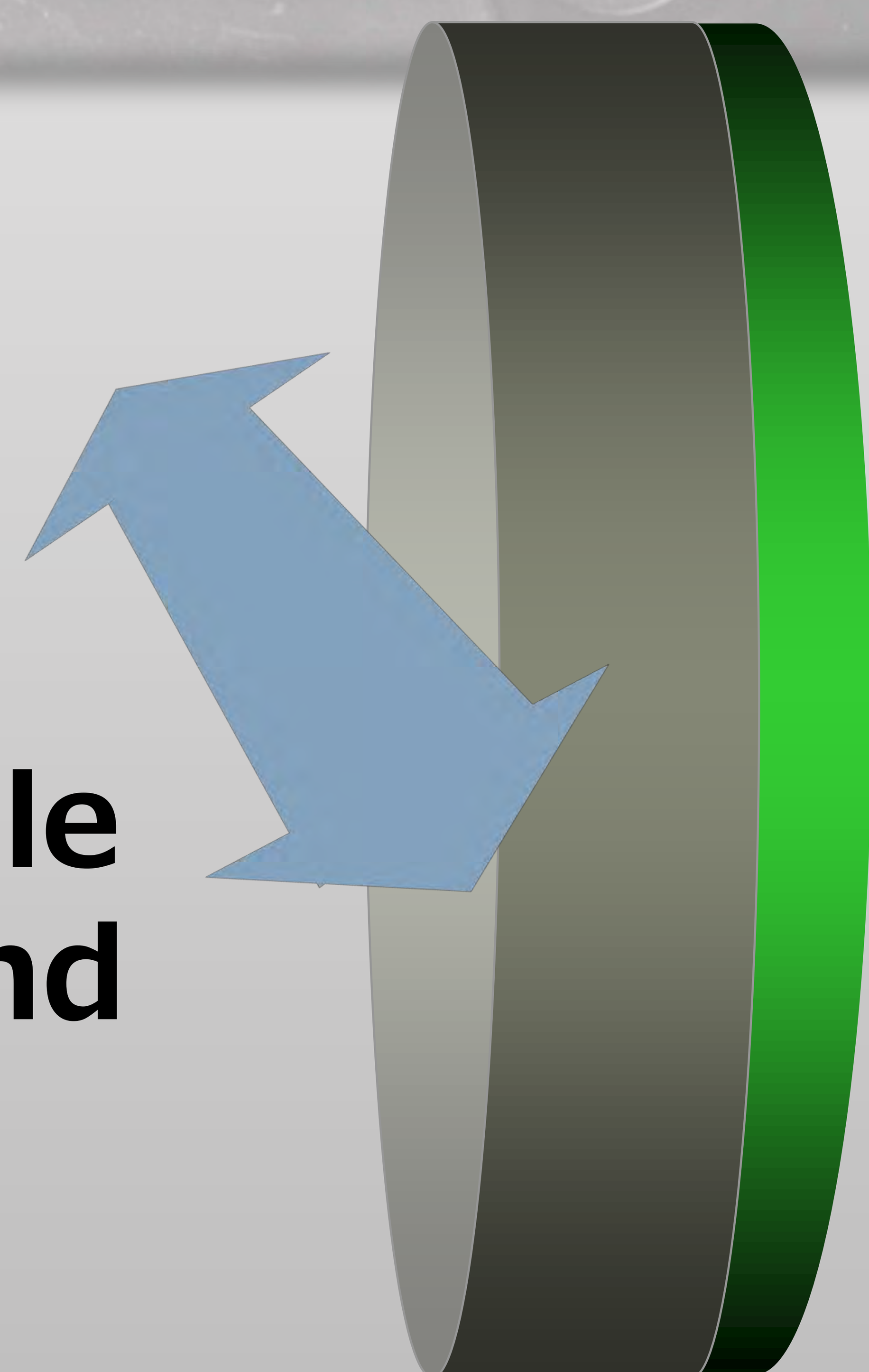
- Horizontal structure has both spindles on a bass having high precision.
- The work spindle moves right and left in order to feed, and the wheel spindle moves back and forward in order to do oscillating moving.
- Because a cut sludge falls below, this structure can reduce a scratch.
- Simple structure can achieve good space efficiency.
- The machine cost is not so high because of the space efficiency.

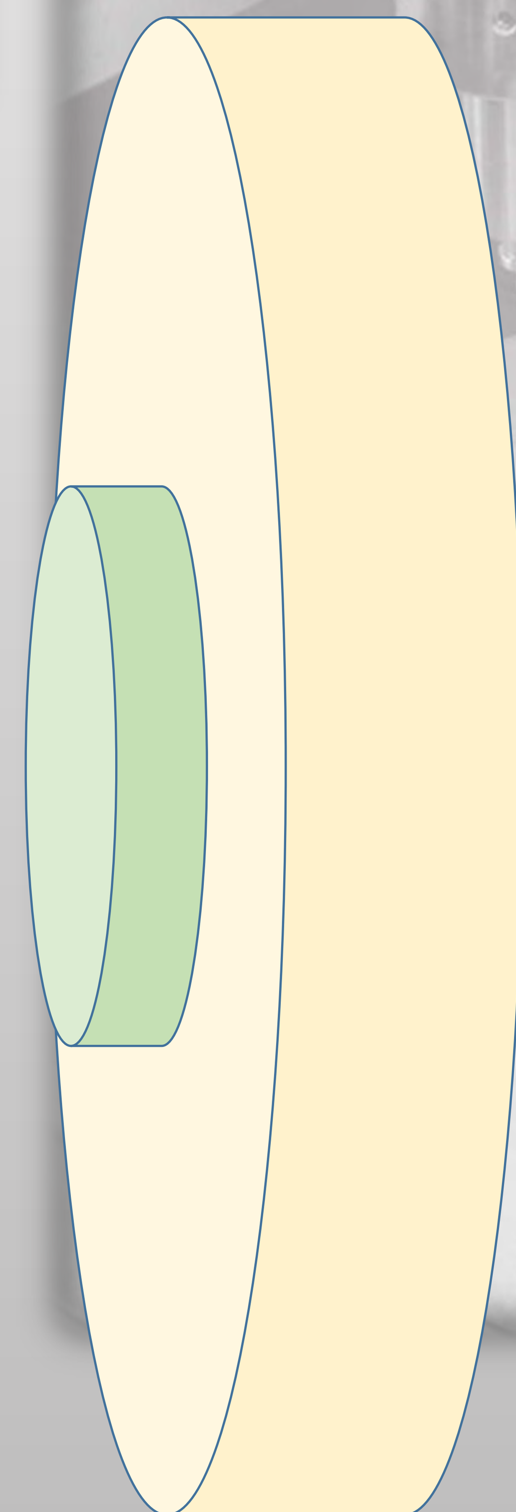

Processing image
※φ2”wafer ×3 batch processing example
Wafer
Fixing Wax
Feeding direction
Substrate Plate
Diamond Wheel

SGM-7000A original movement

①Front Back Oscillation Grinding

The diamond wheel moves front-back oscillation over the substrates during grinding. This mechanism enables substrates to release the stress from the wheel, and provides to reduce surface damage.



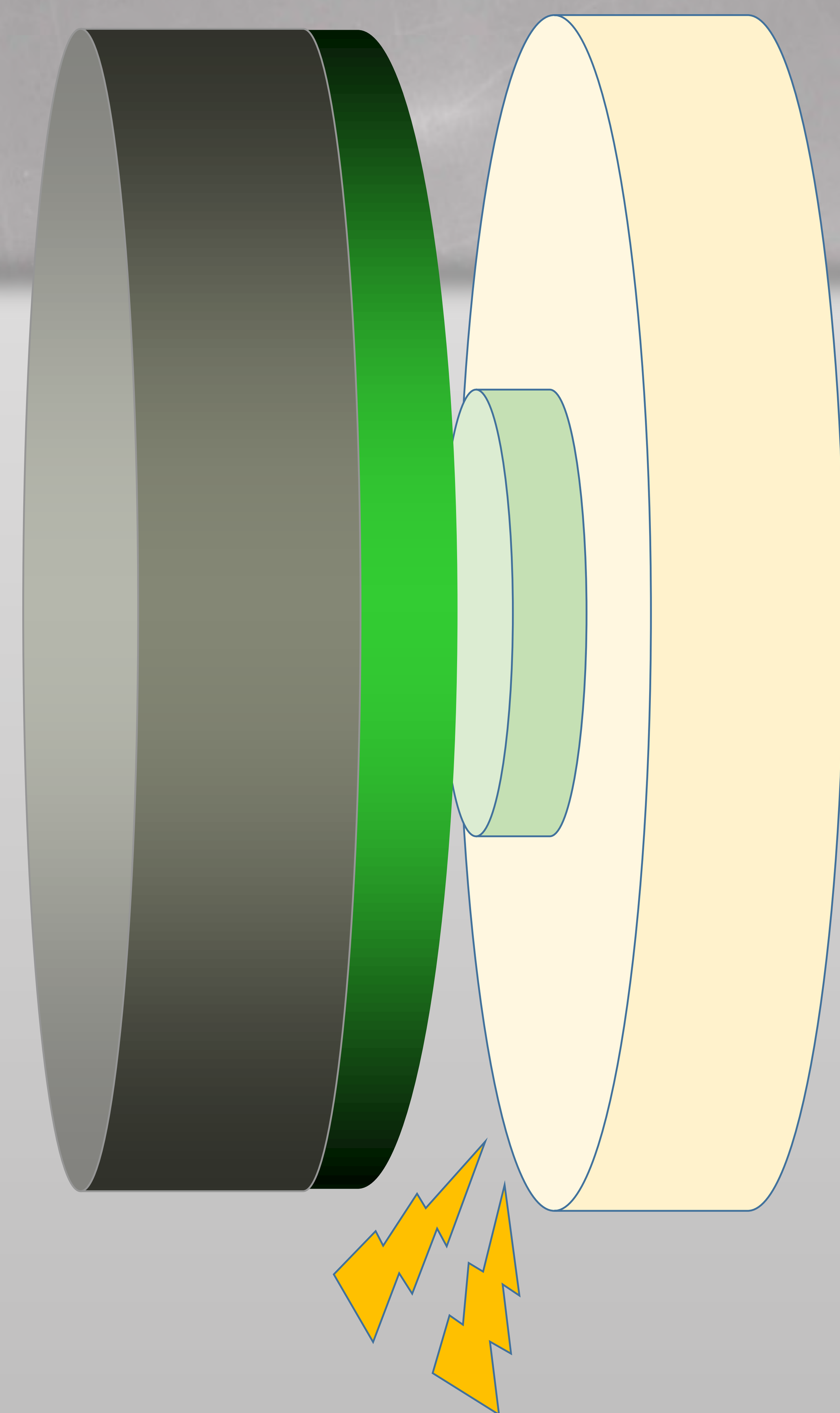


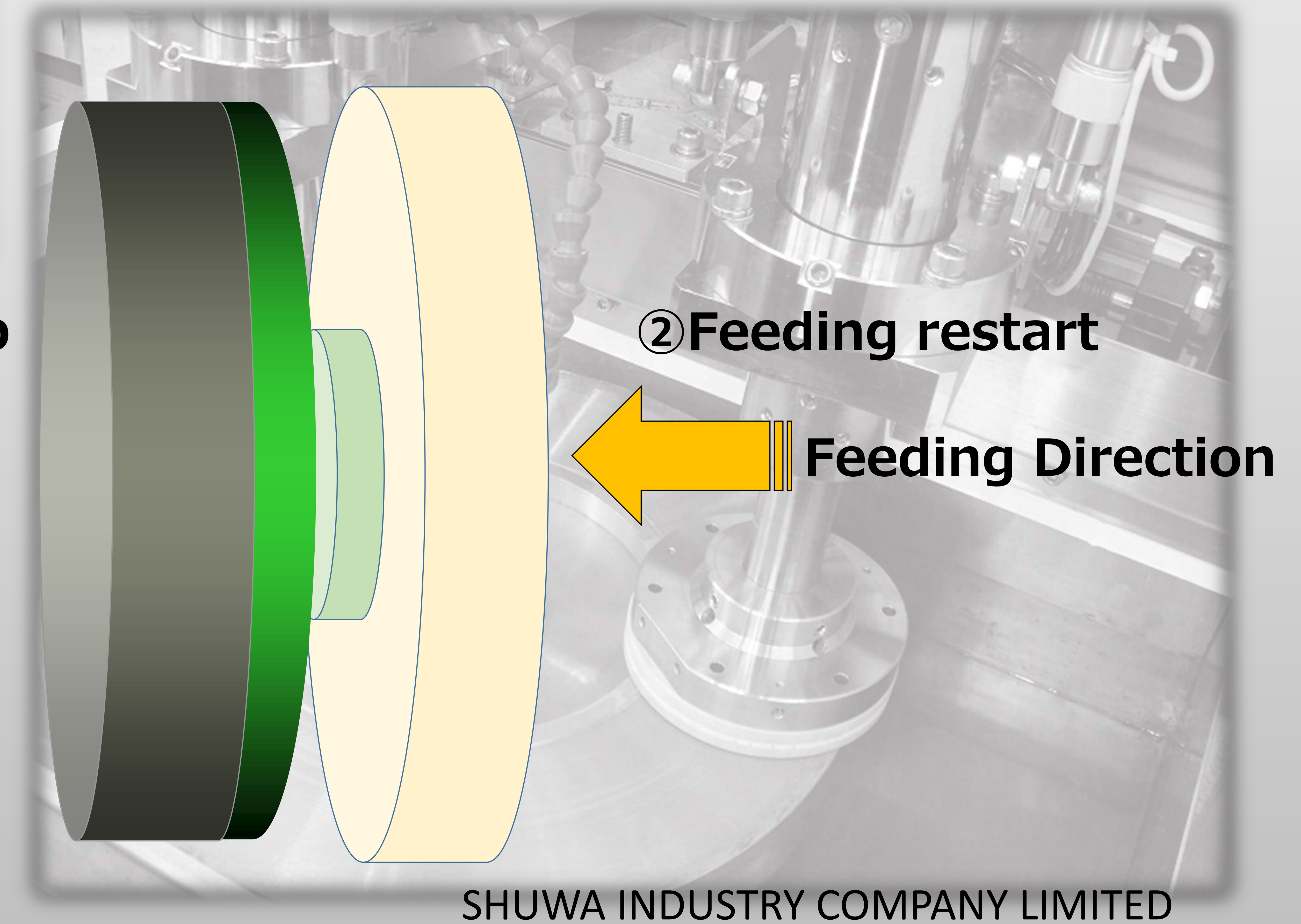
Grinding spindle moves front and back

SGM-7000A original movement

②Intermittent system

SGM-7000 can sets feeding interval time. Within the stop-feeding, a sludge to be excluded, diamond wheel to be cool down, and a materials prevent overdue stress.

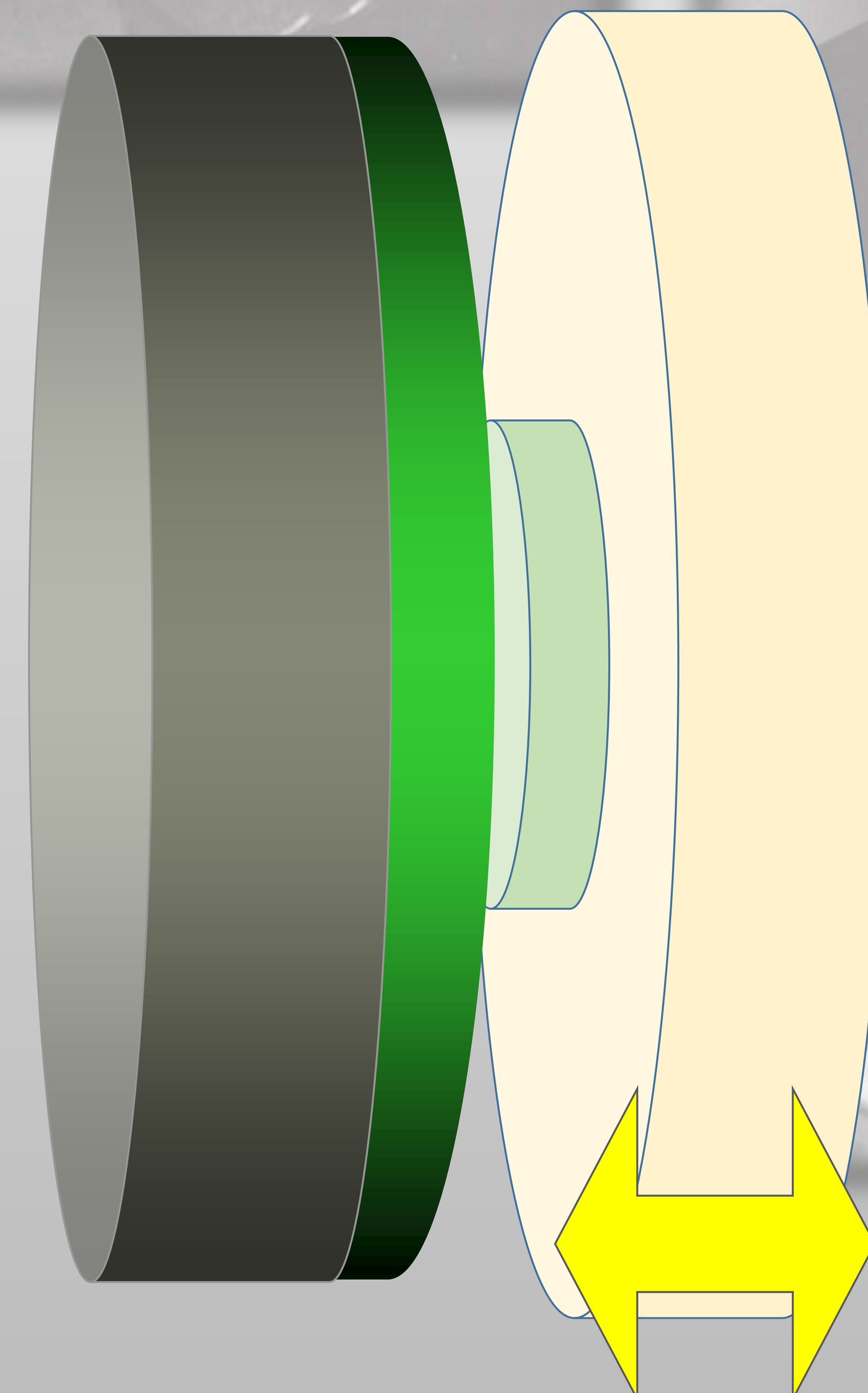




SGM-7000A original movement

③Spark-Out system

This is the mechanism that work performs anteroposterior movement for a processing after arrival in goal thickness. In place of the air-cut movement, SGM-7000 can move only several microns to right and left by Oscillation program. It can improve the final flatness degree and the roughness degree.

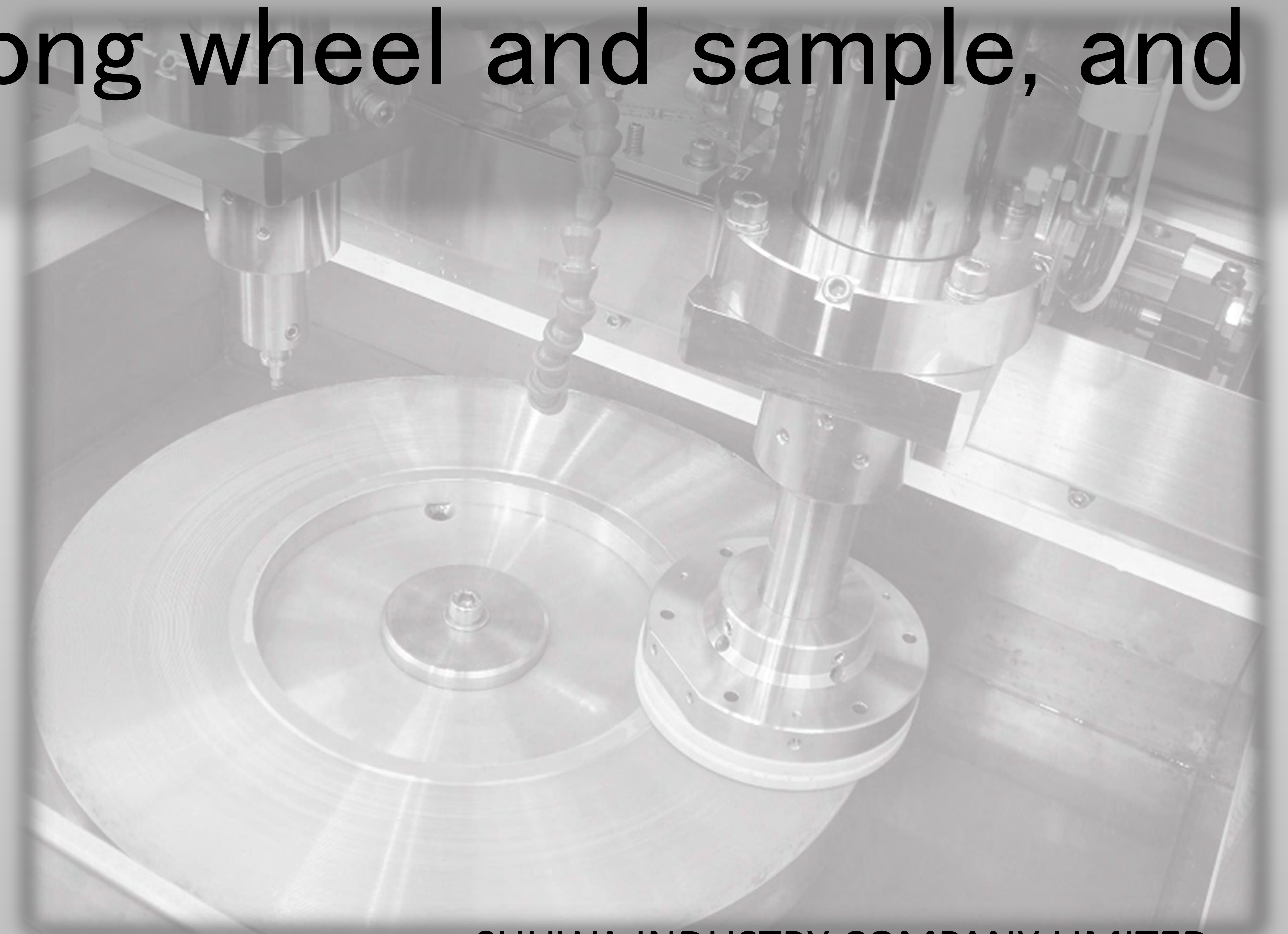


After approaching final thickness, oscillating to right and left

SGM-7000A original movement

④Over-Load Sensor System

Once the sensor detects much overload while grinding process, the system gets the substrate plate back, release overdue stress among wheel and sample, and once start to grind.



SGM-7000A original movement

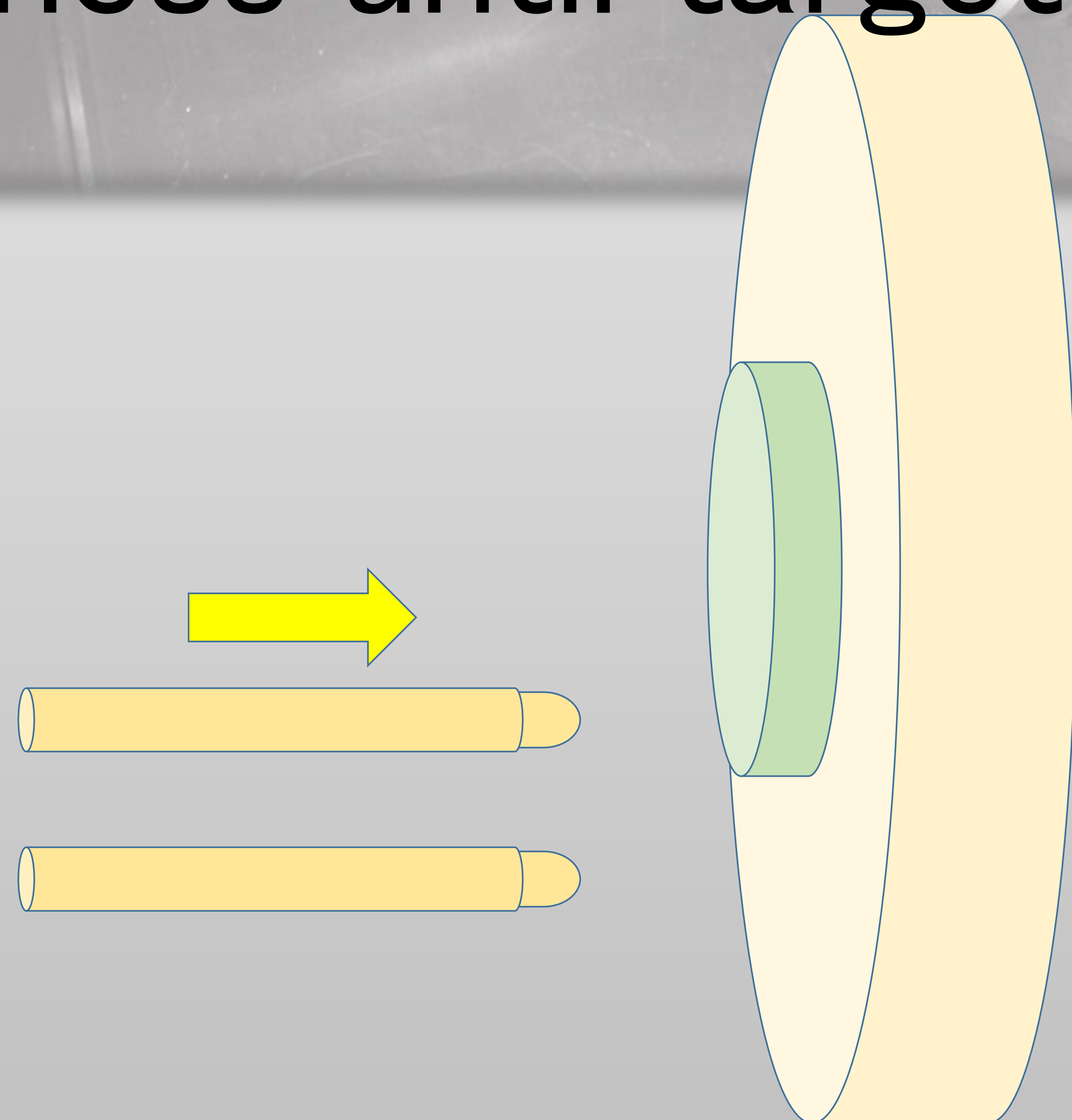
⑤Zero-Touch System

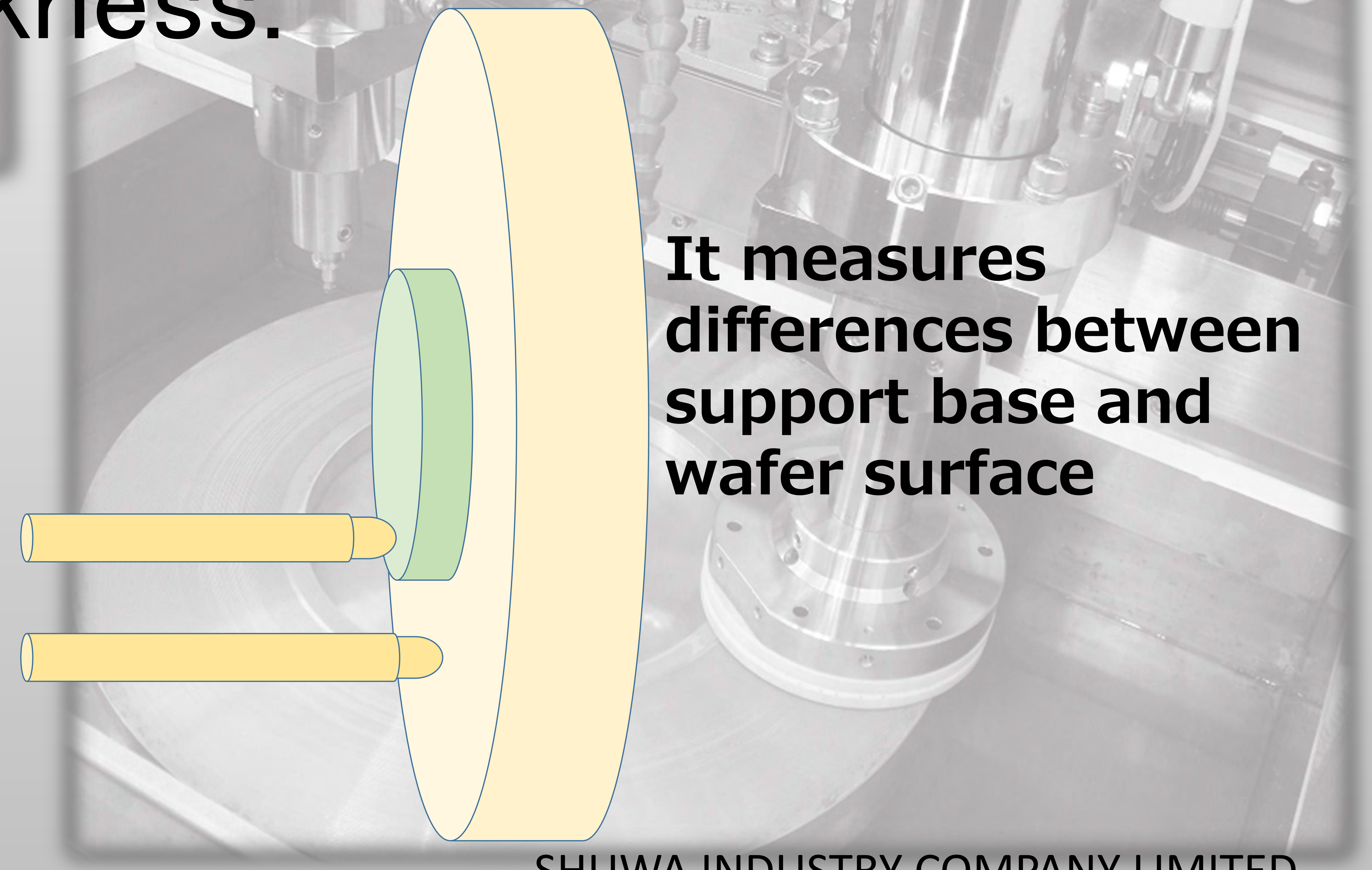
This is the function to come in touch with starting point without operator’s deviation.

SGM-7000A original movement

⑥Automatic measuring system

Automatically measures the thickness of material, re-checks the thickness, and get final grinding. The operator needs no measuring and re-calculation of thickness until target thickness.





It measures differences between support base and wafer surface

Conclusion

(1) SHUWA's Horizontal grinding machine has the sale results more than 500 as a use for mass productions and research and development in a semiconductor, electronic parts, optical glass, and ceramics market.

(2) The merit of this device is that space-saving, highly precise grinding and a competitive price.

(3) SHUWA has a much experience of processing to various materials, so we can propose to you more suitable process solution.

(4) A demonstration test and a tour of facility are possible anytime in a demonstration room of SHUWA.