WHAT IS CLAIMED IS:

1. A polishing apparatus comprising:

a table configured to support a substrate by vacuum-sucking;

a plurality of lift pins arranged at periphery of the table, the lift pins configured to arrange or remove the substrate on or from the table and to be movable in a direction perpendicular to a surface of the table;

a drive mechanism including a motor to move the lift pins in a direction perpendicular to the surface of the table;

and a control device configured to control the drive mechanism,

wherein the control device is configured to be capable of moving the lift pins at a first speed and at a second speed different from the first speed,

the control device is configured to move the plurality of lift pins toward the substrate to a first position at the first speed, the first position being a position where the plurality of lift pins make contact with the substrate, or a position where the plurality of lift pins is about to make contact with the substrate, and

the control device is configured to move the plurality of lift pins from the first position to a second position at the second speed, the second position being a position where the substrate is separated from the table, the second speed being slower than the first speed.

2. The polishing apparatus according to claim 1,

wherein the table includes:

an opening defined in its surface; and

a fluid passage communicating with the opening.

3. The polishing apparatus according to claim 2,

wherein the fluid passage is configured to be capable of coupling to at least one of a pure water source, an air source, a nitrogen gas source, a chemical solution source, and a vacuum source.

4. The polishing apparatus according to claim 1, further comprising a holding

member for holding the lift pins,

wherein the holding member is coupled to the drive mechanism and the lift pins are moved by moving the holding member.

5. The polishing apparatus according to claim 4,

wherein the holding member has an opening and the table is arranged inside the opening of the holding member.

6. The polishing apparatus according to claim 1,

wherein the table is arranged such that the surface thereof faces vertically upward.

7. The polishing apparatus according to claim 1, further comprising a liquid supply mechanism for supplying liquid to a surface of the substrate supported on the table.

8. A method for removing a substrate supported on a table from the table, comprising:

a step of moving a plurality of lift pins toward the substrate to a first position at a first speed, the first position being a position where the plurality of lift pins make contact with an outer peripheral portion of the substrate, or a position where the plurality of lift pins is about to make contact with the outer peripheral portion of the substrate;

a step of detaching the substrate, which has been vacuum-sucked onto the table from the table;

a step of moving the plurality of lift pins from the first position to a second position at a second speed, the second position being a position where the substrate is separated from the table with the outer peripheral portion of the substrate being supported by the plurality of lift pins, the second speed being slower than the first speed,

wherein each of the lift pins includes: a substrate guide surface extending perpendicular to a surface of the substrate supported on the table; and a substrate holding surface extending from the substrate guides surface outwardly in a radial direction of the lift pins; and

wherein when lift pins move from the first position to the second position at the second speed, the substrate guides surfaces of the lift pins face an outermost peripheral edge

of the substrate, and the substrate holding surfaces of the lift pins support the outer peripheral portion of the substrate.

9. The method according to claim 8, further comprising a step of moving the plurality of lift pins from the second position to a third position at a third speed, the third speed being faster than the second speed.

10. The method according to claim 8, further comprising a step of supplying liquid toward the substrate from the table side in the second position.

11. The method according to claim 9, further comprising a step of supplying liquid toward the substrate from the table side in the third position.

12. The polishing apparatus according to claim 1, wherein

each of the lift pins comprises a recess portion for receiving an outer peripheral portion of the substrate, and

the surface of the table faces a horizontal direction or a vertically downward direction.

13. The method according to claim 8, wherein

a support surface of the table faces a horizontal direction;

the step of moving the plurality of lift pins toward the substrate to the first position at the first speed includes a step of moving the plurality of lift pins in vertical direction for holding the substrate;

the step of moving the plurality of lift pins from the first position to the second position at the second speed include a step of moving the plurality of lift pins in horizontal direction.

14. The method according to Claim 10, further comprising a step of supplying liquid toward the substrate from an opposite side in the second position.