Claims

[Claim 1] An application apparatus for applying a protective tape to a semiconductor wafer, comprising:

a tape conveyance mechanism configured to convey the protective tape temporarily applied to a base material to a peeling position;

a tape holding body that holds the protective tape;

a holding-body moving mechanism that moves the tape holding body;

a peeling mechanism configured to peel the base material from the protective tape held by the tape holding body at the peeling position;

an application table configured to support the semiconductor wafer;

a raising and lowering mechanism configured to raise and lower the application table;

a frame base arranged in a periphery of and above the application table, the frame base being configured to support a dicing frame on which the semiconductor wafer is mounted; and

a control device configured to control operations of the holding-body moving mechanism and the raising and lowering mechanism,

wherein the control device is configured to control an operation of the holding-body moving mechanism such that the tape holding body moves to the peeling position and holds the protective tape;

wherein the control device is configured to control operation of the holding-body moving mechanism such that the tape holding body holding the protective tape moves onto the frame base and applies the protective tape to the dicing frame; and

wherein the control device is configured to control an operation of the raising and lowering mechanism such that the application table rises to allow the semiconductor wafer to be applied to the protective tape applied to the dicing frame.

[Claim 2] An application apparatus for applying a protective tape according to claim 1,

wherein the base material has a band shape and has a plurality of protective tapes arranged on the base material at intervals along a conveyance direction of the base material, and

wherein the peeling mechanism includes a peeling plate and a peeling plate moving mechanism configured to cause the peeling plate to reciprocate in the conveyance direction of the base material, the peeling mechanism being configured to peel the base material from the protective tape by moving the peeling plate in a direction opposite to the conveyance direction of the base material while folding back the base material with a distal end of the peeling plate.

[Claim 3] An application apparatus for applying a protective tape according to claim 1, wherein the tape holding body includes an

adsorption member that adsorbs an entire surface of the protective tape.

[Claim 4] An application apparatus for applying a protective tape according to claim 1, wherein the holding-body moving mechanism includes an up-and-down moving mechanism configured to move the tape holding body in an up-and-down direction and a reciprocation mechanism configured to cause the tape holding body to reciprocate in an X direction along a horizontal surface and in a Y direction orthogonal to the X direction.

[Claim 5] An application method of applying a protective tape to a semiconductor wafer, comprising:

a tape conveyance step of conveying the protective tape temporarily applied to a base material to a peeling position by a tape conveyance mechanism;

a holding-body moving step of moving a tape holding body that holds the protective tape to the peeling position by a holding-body moving mechanism;

a peeling step of peeling the base material from the protective tape held by the tape holding body at the peeling position by a peeling mechanism;

a step of applying the protective tape to a dicing frame by moving the tape holding body holding the protective tape onto a frame base supporting the dicing frame by the holding-body moving

mechanism, the frame base being arranged in a periphery of and above the application table supporting the semiconductor wafer; and

a step of mounting the semiconductor wafer on the dicing frame through the protective tape by applying the semiconductor wafer to the protective tape applied to the dicing frame by raising the application table by the raising and lowering mechanism.