

WHAT IS CLAIMED IS:

1. A tape expanding apparatus for expanding an expandable tape of a frame unit in which a workpiece having a plurality of division start points formed along a plurality of division lines is supported through the expandable tape to an annular frame, the tape expanding apparatus comprising:

a frame holding unit for holding the annular frame;

a chuck table surrounded by the frame holding unit, the chuck table having a holding surface for holding the workpiece through the expandable tape;

a moving unit for relatively moving the chuck table and the frame holding unit in a direction perpendicular to the holding surface;

a cassette mounting stage for mounting the cassette storing the frame unit;

a temporary setting area for temporarily setting the frame unit drawn from the cassette;

a transfer unit for transferring the frame unit from the temporary setting area to the chuck table; and

a position adjusting unit for adjusting a position of the workpiece with respect to the holding surface;

the position adjusting unit including

a position detecting unit for detecting the position of the workpiece temporarily set in the temporary setting area or held on the holding surface, and

a position control unit having an abutting unit adapted to abut against an outer circumference of the annular frame supported by the frame holding unit and a moving mechanism for moving the abutting unit according to the position of the workpiece detected by the position detecting unit.

2. The tape expanding apparatus according to claim 1, wherein the position detecting unit is configured by a camera unit for imaging an outer circumference of the workpiece.

3. The tape expanding apparatus according to claim 1 or 2, wherein the position adjusting unit has a plurality of position control units for moving abutting portion along directions different from each other.

4. The tape expanding apparatus according to any one of claims 1 to 3, wherein the moving unit has a ball screw and a pulse motor connected to the ball screw.

5. The tape expanding apparatus according to any one of claims 1 to 4, further comprising:

a heating unit for heating an annular area of the expanding tape defined between the annular frame and the workpiece, thereby shrinking the annular area to thereby remove a slack in the annular area of the expandable tape due to the expansion of the expandable tape.

4. 6. The tape expanding apparatus according to ~~claim~~any one of claims 1 to 5, further comprising:

a cooling chamber in which the frame holding unit and the chuck table are provided; and

a cold air supplying unit for supplying a cold air into the cooling chamber,

the expandable tape being attached through a die attach film to the workpiece.