

WHAT IS CLAIMED IS:

1. A method of forming a cut groove having a predetermined depth in a workpiece with a cutting blade along a projected dicing line set on the workpiece, the method comprising:

a relational expression determining step of cutting a measurement member with the cutting blade to form a first preliminary cut groove therein and determining a relational expression with respect to a distance from a groove bottom of the first preliminary cut groove and a groove width of the first preliminary cut groove;

a reference position setting step of setting a position where a tip end of the cutting blade and a holding surface of a chuck table contact each other as a reference position for incising feed means for moving the cutting blade and the chuck table relatively to each other along a incising feed direction perpendicular to the holding surface of the chuck table;

a preliminary cut groove forming step of, after the relational expression determining step and the reference position setting step have been carried out, setting an amount of incision into the workpiece as being equal to or smaller than a predetermined value from the reference position and the thickness of the workpiece and forming a second preliminary cut groove in the workpiece held on

the chuck table with the cutting blade along the projected dicing line;

a depth calculating step of, after the preliminary cut groove forming step has been carried out, capturing an image of the second preliminary cut groove, measuring a groove width of the second preliminary cut groove, and calculating a depth of the second preliminary cut groove from the groove width of the second preliminary cut groove and the relational expression;

an amount-of-incision resetting step of resetting an amount of incision for the cutting blade to form a cut groove having a predetermined depth in the workpiece, using a corrective value represented by the difference between the amount of incision set in the preliminary cut groove forming step and the depth of the second preliminary cut groove calculated in the depth calculating step; and

a processing step of, after the amount-of-incision resetting step has been carried out, forming a cut groove having a predetermined depth in the workpiece with the cutting blade along the projected dicing line by the amount of incision set in the amount-of-incision resetting step.

2. The method of forming a cut groove according to claim 1, wherein the processing step includes cutting the cut groove along the second preliminary cut groove.

3. The method of forming a cut groove according to claim 1 or 2, wherein the preliminary cut groove forming step, the depth calculating step, and amount-of-incision resetting step are carried out a plurality of times along different projected dicing lines with respect to the workpiece held on the chuck table.