WHAT IS CLAIMED IS:

1. A processing apparatus for processing a plate-shaped workpiece while holding a face side of the workpiece that has a plurality of devices, each device being formed in respective areas demarcated by a plurality of projected dicing lines established on the face side, the processing apparatus comprising:

a chuck table for holding the face side of the workpiece thereon, the chuck table having a holding member including a surface and another surface positioned opposite the surface and having a predetermined region made of a transparent material extending from the surface to the other surface;

a processing unit for processing the workpiece whose face side is being held on the chuck table, thereby forming a processed groove in the workpiece;

a first image capturing unit disposed above the chuck table and having a first image capturing device for capturing an image of a reverse side of the workpiece held on the chuck table;

a second image capturing unit disposed below the chuck table and having a second image capturing device for capturing an image of the face side of the workpiece through the holding member, in an area corresponding in a

thicknesswise direction of the workpiece to an area in which the first image capturing unit captures the image of the face side of the workpiece;

a display device for displaying the image of the workpiece captured by at least either the first image capturing unit or the second image capturing unit; and

a controller having a storage section for storing programs for performing an image processing process and a processing device for processing the images according to the programs stored in the storage section, wherein

the processed groove comprises a fully cut groove extending all the way through the workpiece from the reverse side of the workpiece to the face side of the workpiece,

the first image capturing unit obtains a first image group of images captured of the processed groove while positioning a focal point thereof at a plurality of different positions along the thicknesswise direction of the workpiece, each of the images of the first image group including a piece of first image information representing a shape of the processed groove, and the second image capturing unit obtains a second image group of images captured of the processed groove while positioning a focal point thereof at a plurality of

different positions along the thicknesswise direction of the workpiece, each of the images of the second image group including a piece of second image information representing a shape of the processed groove, and

the controller orders the pieces of at least either the first image information or the second image information into a sequence along the thicknesswise direction of the workpiece, thereby generating a three-dimensional image of the processed groove, and displays the three-dimensional image on the display device.

2. The processing apparatus according to claim 1, wherein the controller orders the pieces of both the first image information and the second image information into a sequence along the thicknesswise direction of the workpiece, thereby generating a three-dimensional image of the processed groove, and displays the three-dimensional image on the display device.