WHAT IS CLAIMED IS:

1. A method for machining a workpiece including a substrate that has a front surface and a back surface and a ductile material layer that contains a ductile material having ductility and is disposed on the front surface or the back surface of the substrate, the method comprising:

a tape bonding step of bonding a tape on a side of the substrate of the workpiece;

a holding step of holding the workpiece by a holding table via the tape such that the ductile material layer is exposed; and

a cutting step of, after performing the holding step, relatively moving the holding table and a cutting blade to cause the cutting blade to cut into the ductile material layer and the substrate, so that the workpiece is cut, wherein

in the cutting step, the cutting blade is rotated such that a portion of the cutting blade, the portion being located on a forward side in a moving direction of the cutting blade relative to the holding table, cuts into the workpiece from the ductile material layer toward the substrate,

after performing the holding step but before performing the cutting step, a position detecting step in

which a position where the cutting blade is to be caused to cut into the workpiece is detected based on an image acquired by imaging the front surface of the substrate through the holding table and the tape,

the ductile material layer is disposed on the back surface of the substrate, and

the workpiece further includes a plurality of devices disposed on a side of the front surface.

2. The method according to claim 1, wherein

the ductile material layer is formed from a metal film.

3. The method according to claim 1, wherein

the ductile material layer is a non-metal film that contains a ductile material having higher ductility that that of the material of the substrate.

4. The method according to claim 2, wherein

the ductile material layer has a thickness of approximately 0.1 to 30μm.

5. The method according to any one of the preceding claims, wherein

the substrate is formed with a material harder than the ductile material.

6. The method according to claim 5, wherein

the substrate is formed from silicon carbide.

7. The method according to any one of the preceding claims,

wherein in the cutting step, a position of a cutting unit is adjusted in a Z-axis direction such that a height of a lower extremity of the cutting blade becomes higher than the front surface of the substrate and lower than a height of an interface between the substrate and the ductile material layer.