WHAT IS CLAIMED IS:

1. A carrier plate removing method for removing a carrier plate from a workpiece, said carrier plate having a front side and a back side opposite to said front side, said workpiece being previously provided through a temporary bonding layer on the front side of said carrier plate, said carrier plate removing method comprising:

forming a shoulder portion as a lower part connected to the back side of said carrier plate, said lower part projecting horizontally outward from a side surface of an upper part connected to the front side of said carrier plate;

a holding step of holding said workpiece by using a holding unit from an upper side of said workpiece in the condition where said workpiece is positioned above said carrier plate, after performing said shoulder portion forming step; and

a carrier plate removing step of applying a downward force from a push member to said shoulder portion after performing said holding step, thereby moving said carrier plate away from said workpiece to thereby remove said carrier plate from said workpiece.

2. The carrier plate removing method according to claim 1, wherein

said carrier plate removing step includes a step of spraying a fluid to a boundary between said carrier plate and said workpiece, said downward force being applied from said push member to said shoulder portion after spraying said fluid or as spraying said fluid, thereby removing said carrier plate from said workpiece.

3. The carrier plate removing method according to claim 2, wherein

said carrier plate removing step includes the step of immersing said workpiece and said carrier plate in a liquid, said downward force being applied from said push member to said shoulder portion in the condition where said workpiece and said carrier plate are immersed in said liquid.

4. The carrier plate removing method according to claim 3, wherein

said liquid contains a surface active agent.

5. The carrier plate removing method according to claim 4, wherein

said carrier plate removing step includes a step of applying vibration to said push member in the condition where said workpiece and said carrier plate are immersed in said liquid, said downward force being applied from said push member to said shoulder portion while applying

said vibration to said push member.

6. The carrier plate removing method according to claim 4, wherein

said carrier plate removing step includes a step of applying vibration to said liquid in the condition where said workpiece and said carrier plate are immersed in said liquid, said downward force being applied from said push member to said shoulder portion while applying said vibration to said liquid.

7. The carrier plate removing method according to claim 3, wherein

said carrier plate removing step includes a step of applying vibration to said push member in the condition where said workpiece and said carrier plate are immersed in said liquid, said downward force being applied from said push member to said shoulder portion while applying said vibration to said push member.

8. The carrier plate removing method according to claim 3, wherein

said carrier plate removing step includes a step of applying vibration to said liquid in the condition where said workpiece and said carrier plate are immersed in said liquid, said downward force being applied from said push member to said shoulder portion while applying said

vibration to said liquid.

9. The carrier plate removing method according to claim 1, wherein

said carrier plate removing step includes a step of immersing said workpiece and said carrier plate in a liquid, said downward force being applied from said push member to said shoulder portion in the condition where said workpiece and said carrier plate are immersed in said liquid.

10. The carrier plate removing method according to claim 9, wherein

said liquid contains a surface active agent.

11. The carrier plate removing method according to claim 10, wherein

said carrier plate removing step includes a step of applying vibration to said push member in the condition where said workpiece and said carrier plate are immersed in said liquid, said downward force being applied from said push member to said shoulder portion while applying said vibration to said push member.

12. The carrier plate removing method according to claim 10, wherein

said carrier plate removing step includes a step of applying vibration to said liquid in the condition where

said workpiece and said carrier plate are immersed in said liquid, said downward force being applied from said push member to said shoulder portion while applying said vibration to said liquid.

13. The carrier plate removing method according to claim 9, wherein

said carrier plate removing step includes a step of applying vibration to said push member in the condition where said workpiece and said carrier plate are immersed in said liquid, said downward force being applied from said push member to said shoulder portion while applying said vibration to said push member.

14. The carrier plate removing method according to claim 9, wherein

said carrier plate removing step includes a step of applying vibration to said liquid in the condition where said workpiece and said carrier plate are immersed in said liquid, said downward force being applied from said push member to said shoulder portion while applying said vibration to said liquid.

15. The carrier plate removing method according to claim 1, wherein the forming a shoulder portion is performed using a cutting blade to remove the peripheral portion of said carrier plate along a peripheral edge

thereof.

16. The carrier plate removing method according to claim 15 wherein the cutting blade removes a peripheral portion of said carrier plate from the front side of said carrier plate and removes a peripheral portion of the workpiece at the same time.

17. The carrier plate removing method according to claim 1, wherein the forming a shoulder portion is performed using a laser beam to remove a peripheral portion of said carrier plate along a peripheral edge thereof.