What is claimed is:

1. A laser processing apparatus for applying a laser beam to a wafer along a plurality of crossing division lines to form an ablation groove along each division line by ablation, said division lines being formed on a front side of said wafer to define a plurality of separate regions where a plurality of devices are each formed, each of said devices having a device pattern, said laser processing apparatus comprising:

a chuck table for holding said wafer;

laser beam applying means having focusing means for applying said laser beam to said wafer held on said chuck table;

feeding means for relatively feeding said chuck table and said laser beam applying means in an X direction;

indexing means for relatively indexing said chuck table and said laser beam applying means in a Y direction perpendicular to said X direction;

a camera for imaging a work area; and

a controller having a CPU and a memory, the CPU being programmed to:

store a key pattern for each device, the key pattern being common to each of said devices;

detect a target pattern, via a target pattern detecting section of the controller, by matching the key pattern in each device with image patterns contained in an image formed by the camera;

detect the spacing in said Y direction between said target pattern and said ablation grooves by measuring the number of pixels between said target pattern and a selected ablation groove;

operate said feeding means to thereby move said wafer held on said chuck table in said X direction with respect to said camera; obtaining the result of detection by said target pattern detecting section for said devices arranged along said ablation groove;

create a map showing the spacing in said Y direction between each target pattern and said selected ablation groove, wherein said map includes a plurality of spacings in said Y direction, with each of said spacings being based on the distance between a different one of said target patterns and the same one of said ablation grooves; and

operate said indexing means according to said map, thereby correcting the position of said laser beam applying means, when used for an ablation groove

subsequent to the selected ablation groove, in said Y direction as needed.

2. The laser processing apparatus according to claim 1, wherein said controller is further programmed to determine whether or not the difference between a maximum value and a minimum value for the spacing in said Y direction between each target pattern and said ablation groove falls within a tolerance, according to said map, wherein when the difference between said maximum value and said minimum value falls within the tolerance, accuracy pass is judged for said feeding means, whereas when the difference between said maximum value and said minimum value falls out of the tolerance, accuracy fail is judged for said feeding means.

3. A laser processing apparatus for applying a laser beam to a wafer along a plurality of crossing division lines to form an ablation groove along each division line by ablation, said division lines being formed on a front side of said wafer to define a plurality of separate regions where a plurality of devices are each formed, each of said devices having a device pattern, said laser processing apparatus comprising:

a chuck table for holding said wafer;

laser beam applying means having focusing means for applying said laser beam to said wafer held on said chuck table;

feeding means for relatively feeding said chuck table and said laser beam applying means in an X direction;

indexing means for relatively indexing said chuck table and said laser beam applying means in a Y direction perpendicular to said X direction;

a camera for imaging a work area; and

a controller having a CPU and a memory, the CPU being programmed to:

store a key pattern for each device, the key pattern being common to each of said devices;

detect a target pattern, via a target pattern detecting section of the controller, by matching the key pattern in each device with image patterns contained in an image formed by the camera;

detect the spacing in said Y direction between said target pattern and said ablation grooves by measuring the number of pixels between said target pattern and a selected ablation groove;

operate said feeding means to thereby move said wafer held on said chuck table in said X direction with respect to said camera;

obtaining the result of detection by said target pattern detecting section for said devices arranged along said ablation groove; and

create a map showing the spacing in said Y direction between each target pattern and said selected ablation groove;

wherein said controller is further programmed to determine whether or not the difference between a maximum value and a minimum value for the spacing in said Y direction between each target pattern and said ablation groove falls within a tolerance, according to said map, wherein when the difference between said maximum value and said minimum value falls within the tolerance, accuracy pass is judged for said feeding means, whereas when the difference between said maximum value and said minimum value falls out of the tolerance, accuracy fail is judged for said feeding means.

4. The laser processing apparatus according to claim 1, wherein said indexing means includes a ball screw and a pulse motor for rotating the ball screw, whereby rotating the ball

screw relatively moves said chuck table with respect to said laser beam applying means in the Y direction.

5. The laser processing apparatus according to claim 3, wherein said indexing means includes a ball screw and a pulse motor for rotating the ball screw, whereby rotating the ball screw relatively moves said chuck table with respect to said laser beam applying means in the Y direction.

6. The laser processing apparatus according to claim 3, wherein when accuracy fail is judged, the controller informs an operator of the accuracy fail.

7. The laser processing apparatus according to claim 2, wherein when accuracy fail is judged, the controller informs an operator of the accuracy fail.

8. The laser processing apparatus according to claim 3, wherein said map includes a plurality of spacings in said Y direction, with each of said spacings being based on the distance between a different one of said target patterns and the same one of said ablation grooves.