WHAT IS CLAIMED IS:

1. A laser oscillator support table for supporting a laser oscillator, the laser oscillator support table comprising:

a base;

a fixed plate supported in a Z-axis direction over the base with intermediary of Z-axis direction movement means, the Z –axis direction being a direction parallel to a vertical direction;

a Y-axis direction moving plate mounted on the fixed plate movably in a Y-axis direction orthogonal to an X-axis direction when an optical path direction of a laser beam emitted from the laser oscillator supported by the laser oscillator support table is defined as the X-axis direction;

a rotating plate that is mounted on the Y-axis direction moving plate rotatably around a rotation center pin fixed to the Y-axis direction moving plate and is configured to support the laser oscillator;

a Y-axis direction movement unit that moves the Y-axis direction moving plate in the Y-axis direction; and

a rotational movement unit that rotates the rotating plate around the rotation center pin in a plane parallel to a plane formed by the X-axis direction and the Y-axis direction.

2. The laser oscillator support table according to claim 1, wherein

the Z-axis direction movement means includes at least three adjusting units configured to be capable of each independently moving in a Z-axis direction,

each of the adjusting units includes a column-shaped part that has a recessed part at an upper part thereof and is fixed to the base, a flange part that protrudes from an outer edge of the fixed plate and has a screw hole and is formed integrally with the fixed plate, a screw that screws into the screw hole of the flange part, and a nut that screws to the screw and fixes the fixed plate at a predetermined height relative to the base, and wherein

a tilt of the laser oscillator support table with respect to an XY-plane is allowed to be adjusted by adjusting a height of each of the adjusting units.

3. The laser oscillator support table according to claim 1, wherein

the Z-axis direction movement means includes at least three adjusting units configured to be capable of each independently moving in a Z-axis direction,

each of the adjusting units includes a column-shaped part that is fixed to the base and has a screw hole opened in an upper end surface thereof, a screw that has a flange at a central part in a longitudinal direction and screws into the screw hole of the column-shaped part, a flange part that has a hole in which the screw is inserted and is formed integrally

with the fixed plate in such a manner as to protrude from an outer edge of the fixed plate, and a nut that screws to the screw and clamps the flange part in cooperation with the flange and fixes the fixed plate at a predetermined height relative to the base, and wherein

a tilt of the laser oscillator support table with respect to an XY-plane is allowed to be adjusted by adjusting a height of each of the adjusting units.

4. The laser oscillator support table according to claim 1, wherein

the Y-axis direction movement unit includes a long hole formed in parallel to the Y-axis direction in the Y-axis direction moving plate, a guide protrusion that is formed integrally with the fixed plate and is inserted in the long hole, a screw that screws into a screw hole formed in the fixed plate and has a tip that abuts against a side part of the Y-axis direction moving plate, and a spring that is inserted in the long hole and causes the guide protrusion and the Y-axis direction moving plate to be biased in such directions as to get further away from each other.

5. The laser oscillator support table according to claim 1, wherein

the rotational movement unit includes a long hole formed in parallel to the Y-axis direction at a central part of the

rotating plate in a longitudinal direction, a guide protrusion that is formed integrally with the Y-axis direction moving plate and is inserted in the long hole, a screw that screws into a screw hole formed in a side part of the Y-axis direction moving plate and has a tip that abuts against a side part of the rotating plate, and a spring that is inserted in the long hole and causes the guide protrusion and the rotating plate to be biased in such directions as to get further away from each other.

6. An adjustment method of a laser oscillator support table including a base, a fixed plate supported in a Z-axis direction over the base with intermediary of Z-axis direction movement means, the Z-axis direction being a direction parallel to a vertical direction, a Y-axis direction moving plate mounted on the fixed plate movably in a Y-axis direction orthogonal to an X-axis direction when an optical path direction of a laser beam emitted from the laser oscillator supported by the laser oscillator support table is defined as the X-axis direction, a rotating plate that is mounted on the Y-axis direction moving plate rotatably around a rotation center pin fixed to the Y-axis direction moving plate and is configured to support the laser oscillator, a Y-axis direction movement unit that moves the Y-axis direction moving plate in the Y-axis direction, and a rotational movement unit that rotates the rotating plate around the rotation center pin in a plane parallel to a plane formed by the X-axis direction and the Y-axis direction, the adjustment

method comprising:

a laser oscillator support step of supporting the laser oscillator by the laser oscillator support table;

a first beam position measurement step of disposing a first beam position measurement unit that measures a position of the laser beam at a first position separate from an emission port of the laser oscillator by a predetermined distance and irradiating the first beam position measurement unit with the laser beam from the laser oscillator to measure the position of the laser beam at the first position; and

a second beam position measurement step of disposing a second beam position measurement unit that measures the position of the laser beam at a second position that is separate from the emission port of the laser oscillator by a predetermined distance and is different from the first position and irradiating the second beam position measurement unit with the laser beam from the laser oscillator to measure the position of the laser beam at the second position,

wherein at least any one of the Y-axis direction movement unit, the Z-axis direction movement means, and the rotational movement unit of the laser oscillator support table is adjusted based on the beam positions measured in the first beam position measurement step and the second beam position measurement step.

7. A laser processing apparatus that irradiates a

workpiece with a laser beam to execute processing, the laser processing apparatus comprising:

a laser oscillator support table according to any of claims 1-5;

a laser beam irradiation unit including the laser oscillator supported by the laser oscillator support table and a light condenser that condenses the laser beam emitted from the laser oscillator;

a chuck table that holds the workpiece; and

a movement unit that moves the laser beam irradiation unit and the chuck table relatively.