**WHAT IS CLAIMED IS:**

1. A laser processing apparatus (1) comprising:

a chuck table (10) having a holding surface (11) configured to hold a workpiece (100);

a laser oscillator (22) configured to oscillate a laser;

a direction changing mirror (31);

a first condenser (29) configured to condense a laser beam (21) emitted from the laser oscillator (22) and reflected by the direction changing mirror (31), and irradiate the workpiece (100) held on the chuck table (10) with the laser beam (21); and

an observing unit (30) configured to observe a state of a condensing point of the laser beam (21) applied to the workpiece (100) in a pseudo manner;

the observing unit (30) including

a second condenser (33) configured to condense the laser beam (21) in a direction parallel to the holding surface (11) of the chuck table (10),

a microscope (34) configured to magnify the laser beam (21) condensed by the second condenser (33),

an imaging element (35) configured to observe and image the condensing point of the laser beam (21) magnified by the microscope (34), and

a control unit configured to determine whether the state of the condensing point of the laser beam (21) observed by the imaging element (35) is acceptable or not,

wherein

when the direction changing mirror (31) is detachably disposed on an optical path of the laser beam (21) between the laser oscillator (22) and the second condenser (33), the direction changing mirror (31) reflects the laser beam (21) towards the workpiece (100), and when the direction changing mirror (31) is removed from the optical path of the laser beam (21) between the laser oscillator (22) and the second condenser (33), the laser beam (21) enters the imaging element (35) via the second condenser (33)and the microscope (34), and

wherein

when it is determined that the state of the condensing point of the laser beam (21) is not acceptable,

optical parts of the laser processing apparatus (1) are adjusted while the image of the condensing point of the laser beam (21) imaged by the imaging element (35) is checked; and

when it is determined that the state of the condensing point of the laser beam (21) is acceptable, the

adjustment of the optical parts is ended.

2. A laser processing apparatus (1-2) comprising:

a chuck table (10) having a holding surface (11) configured to hold a workpiece (100);

a laser oscillator (22) configured to oscillate a laser;

a mirror (28);

a first condenser (29) configured to condense a laser beam (21) emitted from the laser oscillator (22) and reflected by the mirror (28), and irradiate the workpiece (100) held on the chuck table (10) with the laser beam (21); and

an observing unit (30-2) configured to observe a state of a condensing point of the laser beam (21) applied to the workpiece (100) in a pseudo manner;

the observing unit (30-2) including

a second condenser (33) configured to condense the laser beam (21) in a direction perpendicular to the holding surface (11) of the chuck table (10),

a microscope (34) configured to magnify the laser beam (21) condensed by the second condenser (33),

an imaging element (35) configured to observe and image the condensing point of the laser beam (21) magnified by the microscope (34),

a direction changing mirror (31-2), and

a control unit configured to determine whether the state of the condensing point of the laser beam (21) observed by the imaging element (35) is acceptable or not,

wherein

when the direction changing mirror (31-2) is detachably disposed on an optical path of the laser beam (21) between the laser oscillator (22) and the mirror (28), the direction changing mirror (31-2) reflects the laser beam (21) and makes the laser beam (21) enter the imaging element (35) via the second condenser (33) and the microscope (34); and when the direction changing mirror (31-2) is removed from the optical path of the laser beam (21) between the laser oscillator (22) and the mirror (28), the laser beam (21) falls on the mirror (28), and

wherein

when it is determined that the state of the condensing point of the laser beam (21) is not acceptable,

optical parts of the laser processing apparatus (1-2) are adjusted while the image of the condensing point of the laser beam (21) imaged by the imaging element (35) is checked; and

when it is determined that the state of the

condensing point of the laser beam (21) is acceptable, the adjustment of the optical parts is ended.

3. The laser processing apparatus (1; 1-2) according to claim 1 or claim 2, wherein

the observing unit (30; 30-2) is configured to be detachable.

4. The laser processing apparatus (1; 1-2) according to claim 1 or claim 2, wherein

the control unit is configured to determine whether the state of the condensing point of the laser beam (21) observed by the imaging element (35) is acceptable or not by determining whether or not a shape and luminance distribution of the condensing point of the image imaged by the imaging element (35) are within a preset range.

5. An observing method of observing a state of a laser beam (21) applied to a workpiece (100) in a pseudo manner in a laser processing apparatus (1) including

a chuck table (10) having a holding surface (11) configured to hold the workpiece (100), a laser oscillator (22) configured to oscillate a laser, a direction changing mirror (31), and a first condenser (29) configured to condense the laser beam (21) emitted from the laser oscillator (22) and reflected by the direction changing mirror (31), and irradiate the

workpiece (100) held on the chuck table (10) with the laser beam (21), the observing method comprising:

a preparing step of preparing an observing unit (30) including a second condenser (33) configured to condense the laser beam (21) in a direction parallel to the holding surface (11) of the chuck table (10), a microscope (34) configured to magnify the laser beam (21) condensed by the second condenser (33), and an imaging element (35) configured to observe and image a condensing point of the laser beam (21) magnified by the microscope (34);

a disposing step of disposing the observing unit (30) in a position capable of receiving the laser beam (21) emitted from the laser oscillator (22);

an observing step of observing a state of the condensing point of the laser beam (21) emitted from the laser oscillator (22) and incident on the imaging element (35); and

a determining step of determining whether the state of the condensing point of the laser beam (21) observed in the observing step is acceptable or not,

wherein

when the direction changing mirror (31) is detachably disposed on an optical path of the laser beam

(21) between the laser oscillator (22) and the second condenser (33), the direction changing mirror (31) reflects the laser beam (21) towards the workpiece (100) and when the direction changing mirror (31) is removed from the optical path of the laser beam (21) between the laser oscillator (22) and the second condenser (33), the laser beam (21) enters the imaging element (35) via the second condenser (33) and the microscope (34), and

wherein

in the determining step, when it is determined that the state of the condensing point of the laser beam (21) is not acceptable,

optical parts of the laser processing apparatus (1) are adjusted while the image of the condensing point of the laser beam (21) imaged by the imaging element (35) is checked, and

when it is determined in the determining step that the state of the condensing point of the laser beam (21) is acceptable, the adjustment of the optical parts is ended.

6. An observing method of observing a state of a laser beam (21) applied to a workpiece (100) in a pseudo manner in a laser processing apparatus (1-2) including

a chuck table (10) having a holding surface (11)

configured to hold the workpiece (100), a laser oscillator (22) configured to oscillate a laser, a mirror (28), and a first condenser (29) configured to condense a laser beam (21) emitted from the laser oscillator (22) and reflected by the mirror (28), and irradiate the workpiece (100) held on the chuck table (10) with the laser beam (21), the observing method comprising:

a preparing step of preparing an observing unit (30-2) including a second condenser (33) configured to condense the laser beam (21) in a direction perpendicular to the holding surface (11) of the chuck table (10), a microscope (34) configured to magnify the laser beam (21) condensed by the second condenser (33), a direction changing mirror (31-2), and an imaging element (35) configured to observe and image a condensing point of the laser beam (21) magnified by the microscope (34);

a disposing step of disposing the observing unit (30-2) in a position capable of receiving the laser beam (21) emitted from the laser oscillator (22);

an observing step of observing a state of the condensing point of the laser beam (21) emitted from the laser oscillator (22) and incident on the imaging element (35); and

a determining step of determining whether the state

of the condensing point of the laser beam (21) observed in the observing step is acceptable or not,

wherein

when the direction changing mirror (31-2) is detachably disposed on an optical path of the laser beam (21) between the laser oscillator (22) and the mirror (28), the direction changing mirror (31-2) reflects the laser beam (21) and makes the laser beam (21) enter the imaging element (35) via the second condenser (33) and the microscope (34), and when the direction changing mirror (31-2) is removed from the optical path of the laser beam (21) between the laser oscillator (22) and the mirror (28), the laser beam (21) falls on the mirror (28), and

wherein

in the determining step, when it is determined that the state of the condensing point of the laser beam (21) is not acceptable,

optical parts of the laser processing apparatus (1-2) are adjusted while the image of the condensing point of the laser beam (21) imaged by the imaging element (35) is checked, and

when it is determined in the determining step that the state of the condensing point of the laser beam (21)

is acceptable, the adjustment of the optical parts is ended.

7. The laser beam observing method according to claim 5 or claim 6, wherein

in the determining step, a beam shape and a luminous intensity distribution at a processing point of the laser beam (21) are determined on a basis of a shape and luminance distribution of the condensing point of the image imaged by the imaging element (35).