CLAIMS

[Claim 1]
A machining method comprising:
irradiating a first main surface of a glass plate with a beam-shaped gas cluster;
moving the glass plate such that a point at which the first main surface of the glass plate is irradiated with the gas cluster is moved; and
blocking fluid matter that is expected to form a defect on at least one of a second main surface of the glass plate and an end surface of the glass plate by using a blocking unit that moves together with the glass plate, the second main surface being opposite to the first main surface,
wherein at least part of a peripheral component of the glass plate is arranged outside the glass plate as seen in the irradiation direction of the gas cluster,
the blocking unit includes a shield plate which is situated such that the shield plate faces the first main surface of the glass plate, and
the shield plate covers and conceals at least part of the peripheral component which arranged outside the glass plate as seen in the irradiation direction of the gas cluster.

[Claim 2]
The machining method according to claim 1, wherein
the peripheral component includes at least one of a stage, a spacer and a clamp.

[Claim 3]
The machining method according to claim 1 or 2, wherein
the shield plate is situated such that the shield plate overlaps with a peripheral edge of the glass plate as seen in an irradiation direction of the gas cluster.

[Claim 4]
The machining method according to claim 3,

wherein the shield plate is formed in a frame shape and is situated such that the shield plate overlaps with an entirety of the peripheral edge of the glass plate as seen in the irradiation direction of the gas cluster.

[Claim 5]

The machining method according to any one of claims 1 to 4, wherein the blocking unit includes at least one of a mask that covers the second main surface of the glass plate and a mask that covers the end surface of the glass plate.

[Claim 6]

The machining method according to any one of claims 1 to 5, wherein

a stage that holds the glass plate is situated such that the stage faces the second main surface of the glass plate and is configured to hold the glass plate via a spacer, and

the spacer forms a gap between the glass plate and the stage.

[Claim 7]

The machining method according to claim 6, wherein part of the spacer is situated outside the glass plate as seen in the irradiation direction of the gas cluster.

[Claim 8]

The machining method according to any one of claims 1 to 7, wherein

a stage that holds the glass plate is situated such that the stage faces the second main surface of the glass plate and is configured to hold the glass plate via a clamp, and

at least part of the clamp is situated outside the glass plate as seen in an irradiation direction of the

gas cluster.

[Claim 9]
The machining method according to any one of claims 1 to 8, wherein
a stage that holds the glass plate is situated such that the stage faces the second main surface of the glass plate, and has an opening through which the gas cluster is to be passed, and
the opening of the stage is provided such that the opening overlaps with a peripheral edge of the glass plate as seen in an irradiation direction of the gas cluster.

[Claim 10]
A manufacturing method for an EUVL-use mask blank, the manufacturing method comprising:
flattening a first main surface of a glass plate by using the machining method of any one of claims 1 to 9;
forming a reflective film that reflects EUV light, the reflective film being formed on the first main surface of the glass plate; and
forming an absorption film that absorbs the EUV light, the absorption film being formed on or above the reflective film.

[Claim 11]
A machining device comprising:
an irradiation unit that irradiates a first main surface of a glass plate with a beam-shaped gas cluster;
a stage that holds the glass plate;
a stage moving mechanism that moves the stage such that a point at which the first main surface of the glass plate is irradiated with the gas cluster is moved; and
a blocking unit that blocks fluid matter that is expected to form a defect on or in at least one of a second main surface of the glass plate and an end surface of the glass plate by moving together with the stage, the second main surface being opposite to the first main surface,

wherein at least part of a peripheral component of the glass plate is arranged outside the glass plate as seen in the irradiation direction of the gas cluster,

the blocking unit includes a shield plate which is situated such that the shield plate faces the first main surface of the glass plate, and

the shield plate covers and conceals at least part of the peripheral component which arranged outside the glass plate as seen in the irradiation direction of the gas cluster.

[Claim 12]

The machining device according to claim 11, wherein

the peripheral component includes at least one of a stage, a spacer and a clamp.