That is, according to a first invention of a moving stage of the present invention, provided is a moving stage that is installed in a processing room in which a processing target is processed under an adjusted atmosphere, including: a stage main body on which the processing target is placed; and a gas support unit that supports the stage main body in a non-contact manner by a gas pressure. The gas support unit includes one or more gas pads that face at least a lying surface or/and a standing surface of the processing room and each blow out gas toward the surface. The moving stage further comprises a pad cover that covers, with a space, an outer peripheral surface of the gas pad and a gas pad rear surface opposite to a support surface of the gas support unit. A fine-particle dust suction port is provided by a gap between the outer peripheral surface of the gas pad and a peripheral edge of the pad cover~~around each of the gas pads~~. A suctioned gas exhaust line extended to an outside of the processing room is provided so as to be opened in a space between the gas pad rear surface and the pad cover and be communicated with the fine-particle dust suction port with an intermediation of a space in the pad cover.

[0009]

According to a moving stage of a second aspect, in the first invention, the gas support portion is provided to the stage main body.

[0010]

According to a moving stage of a third aspect, in the first or second invention, the gas support unit is provided to a guide that guides the stage main body.

[0011]

~~According to a moving stage of a fourth invention, in any of the first to third inventions, a~~A plurality of the fine-particle dust suction ports are provided along a periphery of the gas pad.

[0012]

~~According to a moving stage of a fifth invention, in any of the first to fourth inventions, t~~The fine-particle dust suction port

includes an opening that is continuous over an entire periphery of the gas pad.

[0013]

According to a moving stage of a ~~sixth~~ fourth invention, in any of the first to ~~fifth~~ third inventions, the fine-particle dust suction port is located behind of a blow-out end surface of the gas pad in a blow-out direction within a range of 100 mm or less.

[0014]

~~According to a moving stage of a seventh invention, in any of the first to sixth inventions, t~~The moving stage further includes a pad cover that surrounds the gas pad and has an outer edge substantially along a peripheral edge of the gas pad. The fine-particle dust suction port is provided to the pad cover, and the fine-particle dust suction port and the suctioned gas exhaust line are connected to each other via a space in the pad cover.

[0015]

~~According to a moving stage of an eighth invention, in the seventh invention, t~~The fine-particle dust suction port is formed by a gap between the pad cover and the gas pad.

[0016]

According to a moving stage of a ~~ninth~~ fifth invention, in any of the first to fourth ~~eighth~~ inventions, a size of the gap falls within a range of 100 mm or less.

[0017]

According to a moving stage of a ~~tenth~~ sixth invention, in any of the first to ~~ninth~~ fifth inventions, the gas support unit includes a gas bearing that supports the stage main body in a non-contact manner with respect to an axis part.

[0018]

~~According to a moving stage of an eleventh invention, in any of the first to tenth inventions, a~~A difference between a total gas suction amount of the fine-particle dust suction port and a total gas blow-out amount of the gas support unit is adjusted to a predetermined amount range.

[0019]

According to a moving stage of a ~~twelfth~~ seventh invention, in any of the first to ~~eleventh~~ sixth inventions, the moving stage is installed in a semiconductor manufacture processing room whose processing target is a semiconductor.

[Advantageous Effects of Invention]

[0020]

According to the present invention, the fine-particle dust suction port placed around the gas pad enables fine-particle dust generated by the gas jetted from the gas pad to be effectively suctioned and discharged to the outside of the processing room, whereby harmful effects on the processing target due to the fine-particle dust can be avoided. Further, there is another effect that, if the moving stage is repetitively moved, fine-particle dust in the vicinity of the blow-out area can be removed and the inside of the processing room can be cleaned.

[Brief Description of Drawings]

[0021]

[Figure 1] Figure 1 is a schematic view illustrating a semiconductor manufacturing apparatus including a moving stage according to an embodiment of the present invention.

[Document Name] Claims

[Claim 1]

A moving stage that is installed in a processing room in which a processing target is processed under an adjusted atmosphere, comprising:

a stage main body on which the processing target is placed; and

a gas support unit that supports the stage main body in a non-contact manner by a gas pressure, wherein

the gas support unit includes one or more gas pads that face at least a lying surface or/and a standing surface of the processing room and each blow out gas toward the surface,

a fine-particle dust suction port is provided around each of the gas pads, and

a suctioned gas exhaust line extended to an outside of the processing room is provided so as to be communicated with the fine-particle dust suction port.

[Claim 2]

The moving stage according to claim 1, wherein the gas support unit is provided to the stage main body.

[Claim 3]

The moving stage according to claim 1 or 2, wherein the gas support unit is provided to a guide that guides the stage main body.

[Claim 4]

The moving stage according to any of claims 1 to 3, wherein a plurality of the fine-particle dust suction ports are provided along a periphery of the gas pad.

[Claim 5]

The moving stage according to any of claims 1 to 4, wherein the fine-particle dust suction port includes an opening that is continuous over an entire periphery of the gas pad.

[Claim 6]

The moving stage according to any of claims 1 to 5, wherein the fine-particle dust suction port is located behind of a blow-out end surface of the gas pad in a blow-out direction within a range of 100 mm or less.

[Claim 7]

The moving stage according to any of claims 1 to 6, further comprising a pad cover that surrounds the gas pad and has an outer edge substantially along a peripheral edge of the gas pad, wherein

the fine-particle dust suction port is provided to the pad cover, and

the fine-particle dust suction port and the suctioned gas exhaust line are connected to each other via a space in the pad cover.

[Claim 8]

The moving stage according to claim 7, wherein the fine-particle dust suction port is formed by a gap between the pad cover and the gas pad.

[Claim 9]

The moving stage according to claim 8, wherein a size of the gap falls within a range of 100 mm or less.

[Claim 10]

The moving stage according to any of claims 1 to 9, wherein the gas support unit includes a gas bearing that supports the stage main body in a non-contact manner with respect to an axis part.

[Claim 11]

The moving stage according to any of claims 1 to 10, wherein a difference between a total gas suction amount of the fine-particle dust suction port and a total gas blow-out amount of the gas support unit is adjusted to a predetermined amount range.

[Claim 12]

The moving stage according to any of claims 1 to 11, being installed in a semiconductor manufacture processing room whose processing target is a semiconductor.

Claims

[Claim 1]

A moving stage that is installed in a processing room in which a processing target is processed under an adjusted atmosphere, comprising:

a stage main body on which the processing target is placed; and

a gas support unit that supports the stage main body in a non-contact manner by a gas pressure, wherein

the gas support unit includes one or more gas pads that face at least a lying surface or/and a standing surface of the processing room and each blow out gas toward the surface,

the moving stage further comprises a pad cover that covers, with a space, an outer peripheral surface of the gas pad and a gas pad rear surface opposite to a support surface of the gas support unit,

a fine-particle dust suction port is provided by a gap between the outer peripheral surface of the gas pad and a peripheral edge of the pad cover, and

a suctioned gas exhaust line extended to an outside of the processing room is provided so as to be opened in a space between the gas pad rear surface and the pad cover and be communicated with the fine-particle dust suction port with an intermediation of a space in the pad cover.

[Claim 2]

The moving stage according to claim 1, wherein the gas support unit is provided to the stage main body.

[Claim 3]

The moving stage according to claim 1 or 2, wherein the gas support unit is provided to a guide that guides the stage main body.

[Claim 4]

The moving stage according to any of claims 1 to 3, wherein the fine-particle dust suction port is located behind of a blow-out end surface of the gas pad in a blow-out direction within a range of 100 mm or less.

[Claim 5]

The moving stage according to any of claims 1 to 4, wherein a size of the gap falls within a range of 100 mm or less.

[Claim 6]

The moving stage according to any of claims 1 to 5, wherein the gas support unit includes a gas bearing that supports the stage main body in a non-contact manner with respect to an axis part.

[Claim 7]

The moving stage according to any of claims 1 to 6, being installed in a semiconductor manufacture processing room whose processing target is a semiconductor.