

What is claimed is:

1. An electronic component mounting device, comprising:

5 a stage in which a plurality of stage portions are defined;

a first heater provided in the plurality of stage portions respectively, and which can be controlled independently;

a mounting head arranged over the stage; and

10 a second heater provided in the mounting head.

2. An electronic component mounting device according to claim 1, wherein each of the first heater and the second heater is a pulse heater.

3. An electronic component mounting device according to claim 1, further comprising:

15 a flux transfer head for transferring flux to an electronic component.

4. An electronic component mounting device according to claim 1, wherein a groove portion formed to a surface of the stage and an air supply route which is communicated with a bottom part of the groove portion are provided independently in the plurality of stage portions respectively.

5. An electronic component mounting device according to claim 1, further comprising:

25 a first alignment camera imaging an alignment mark of an electronic component structure arranged over the stage; and

30 a second alignment camera imaging an alignment mark of an electronic component fixed to the mounting head.

6. A method of manufacturing an electronic device, comprising:

35 preparing an electronic component mounting device which includes:

a stage in which a plurality of stage portions are defined;

a first heater provided in the plurality of stage portions respectively, and which can be controlled independently;

a mounting head arranged over the stage;
5 and

a second heater provided in the mounting head;

arranging an electronic component structure on the stage, and fixing a first electronic component
10 to the mounting head;

arranging the first electronic component fixed to the mounting head, on the electronic component structure on a first stage portion;

heating the electronic component structure and
15 the first electronic component by the first heater of the first stage portion and the second heater of the mounting head at a first temperature, and then cooling to a second temperature which is lower than the first temperature, to connect an electrode of
20 the electronic component structure and an electrode of the first electronic component;

separating the mounting head from the first electronic component, and then fixing a second electronic component to the mounting head;

25 arranging the second electronic component fixed to the mounting head, on the electronic component structure on a second stage portion; and

heating the electronic component structure and the second electronic component by the first heater
30 of the second stage portion and the second heater of the mounting head at the first temperature, in a state that a temperature of the first stage portion is set to the second temperature which is lower than the first temperature, and then cooling to the
35 second temperature which is lower than the first temperature, to connect an electrode of the electronic component structure and an electrode of

the second electronic component,.

7. A method of manufacturing an electronic device, according to claim 6, wherein each of the first heater and the second heater is a pulse heater.

8. A method of manufacturing an electronic device, according to claim 6, wherein the electronic component structure and the first and second electronic component are connected via solder,

the first temperature is a reflow temperature of the solder, and

the second temperature is not a reflow temperature of the solder.

9. A method of manufacturing an electronic device, according to claim 6, wherein the cooling to the second temperature which is lower than the first temperature, includes,

a groove portion formed on a surface of the stage and the air supply route which is communicated with a bottom part of the groove portion are provided independently on respective the stage portions of the stage, and

the cooling is performed by applying air from the air supply route.

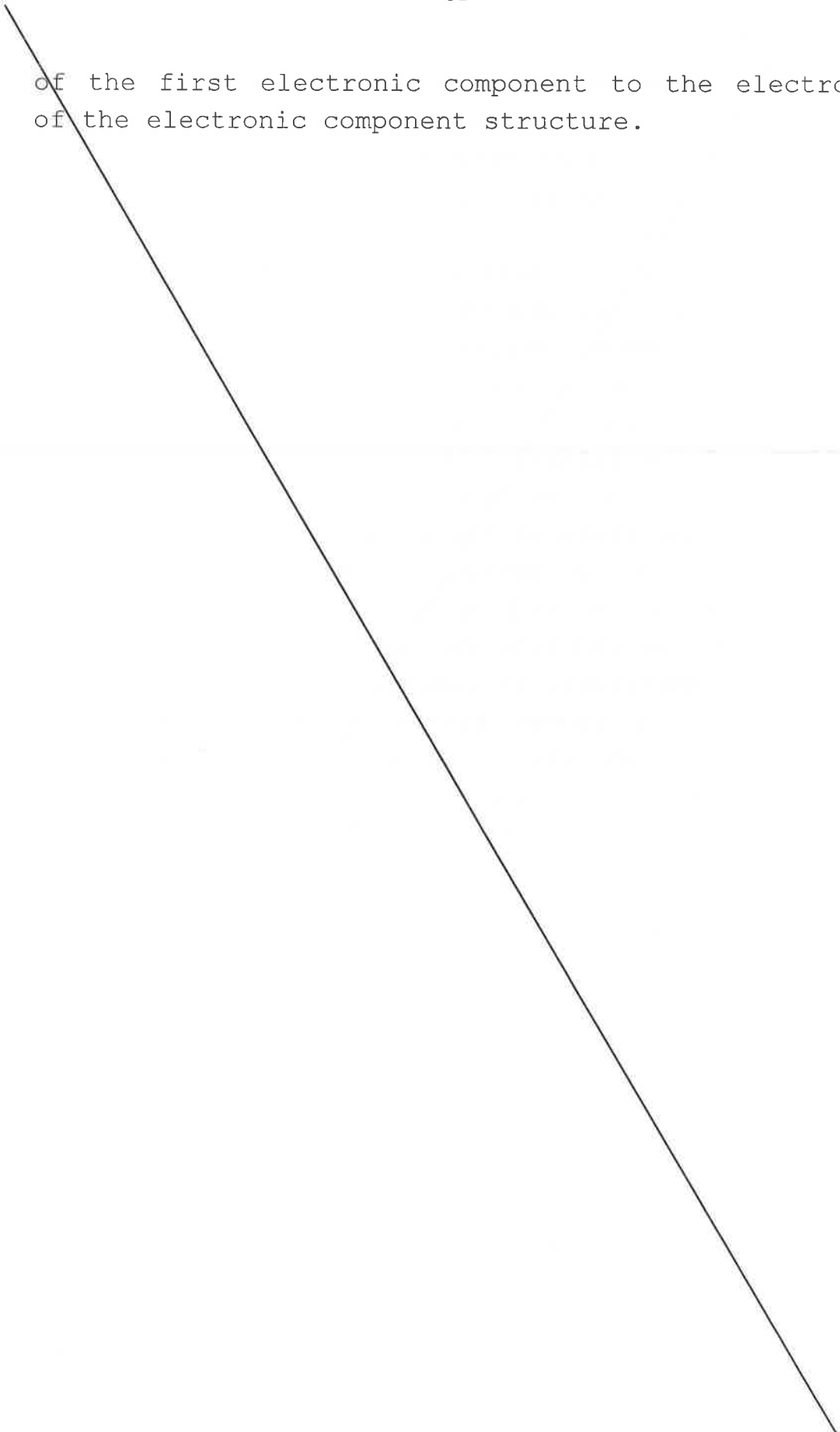
10. A method of manufacturing an electronic device, according to claim 6, wherein in the arranging the electronic component structure on the stage and the fixing the first electronic component to the mounting head,

the electronic component mounting device includes a flux transfer head,

before fixing the first electronic component to the mounting head,

fixing the first electronic component to the flux transfer head, then making the flux adhere to the electrode of the first electronic component, and then transferring the flux by pushing the electrode

of the first electronic component to the electrode
of the electronic component structure.



What is claimed is:

1. An electronic component mounting device, comprising:

- a stage arranged in a process chamber, the stage including: a plurality of stage portions which are defined in the stage, a groove portion formed on a surface of the stage portions, an air supply route which is communicated with a bottom part of the groove portion;

wherein the groove portion and the air supply route are provided independently in the stage portions respectively, and

- a first pulse heater provided as individual heaters in the plurality of stage portions respectively, and wherein heating of each of the first pulse heater can be controlled independently; a mounting head arranged over the stage in the process chamber, the mounting head being provided with in a second pulse heater;
- a flux transfer head for transferring flux to an electronic component, the flux transfer head arranged over the stage in the process chamber;
- a flux table into which flux is put, the flux table arranged on the stage;
- a first alignment camera imaging an alignment mark of an electronic component structure which is to be arranged on the stage; and
- a second alignment camera imaging an alignment mark of the electronic component fixed to the mounting head or the flux transfer head.

2. A method of manufacturing an electronic device, comprising:

i. preparing an electronic component mounting device which includes:

- a stage arranged in a process chamber, the stage including: a plurality of stage portions which are defined in the stage, a groove portion formed on a surface of the stage portions, an air supply route which is communicated with a bottom part of the groove portion;

wherein groove portion and the air supply route are provided independently in the stage portion respectively, and

- a first pulse heater provided as individual heaters in the plurality of stage portions respectively, and wherein heating of each of the first pulse heater can be controlled independently;
- a mounting head arranged over the stage in the process chamber, the mounting head being provided with in a second pulse heater;
- a flux transfer head for transferring flux to an electronic component, the flux transfer head arranged over the stage in the process chamber;
- a flux table into which flux is put, the flux table arranged on the stage;
- a first alignment camera imaging an alignment mark of an electronic component structure which is to be arranged on the stage; and
- a second alignment camera imaging an alignment mark of the electronic component fixed to the mounting head or the flux transfer head

ii. arranging an electronic component structure on the stage;

- iii. transferring the flux onto a solder electrode of a first electronic component which is disposed on a first stage portion in the plurality of stage portions, by pushing the solder electrode of the first electronic component fixed to the flux transfer head against the flux in the flux table;
- iv. transferring the flux onto an electrode of the electronic component structure which is disposed on a first stage portion in the plurality of the stage portions, by pushing the flux of the solder electrode of the first electronic component fixed to the flux transfer head against the electrode of the electronic component structure;
- v. separating the first electronic component from the flux transfer head, and then fixing the first electronic component to the mounting head;
- vi. imaging the alignment mark of the electronic component structure which is disposed on the first stage portion and the alignment mark of the first electronic component, by the first alignment camera and the second alignment camera. , thereby the alignment between the electronic component structure and the first electronic component is performed;
- vii. arranging the first electronic component fixed to the mounting head, on the electrode of the electronic component structure, by pushing the solder electrode of the first electronic component fixed to the mounting head, on the flux of the electrode of the electronic component structure which is disposed on the first stage portion;
- viii. heating the electronic component structure which is disposed on the first stage portion and the first electronic component, by the first heater of the first stage portion and the second heater of the mounting head at a first temperature which is a reflow temperature of the solder;
- ix. cooling to a second temperature which is lower than the first temperature, to connect the electrode of the electronic component structure which is disposed on the first stage portion and the electrode of the first electronic component;
- x. separating the mounting head from the first electronic component, and then fixing a second electronic component to the flux transfer head;
- xi. transferring the flux onto a solder electrode of the second electronic component, by pushing the solder electrode of the second electronic component fix to the flux transfer head against the flux in the flux table;
- xii. transferring the flux onto an electronic component structure which is disposed on a second stage portion in the plurality of stage portions, by pushing the flux of the solder electrode of the second electronic component fixed to the flux transfer head against the electrode of the electronic component structure;
- xiii. separating the second electronic component from the flux transfer head, and then fixing the second electrode component to the mounting head;

- xiv. imaging the alignment mark of the electronic component structure which is disposed on the second stage portion and the alignment mark of the second electronic component by the first alignment camera and the second alignment camera , thereby the alignment between the electronic component structure and the first electronic component is performed;
- xv. arranging the second electronic component fixed to the mounting head, on the electrode of the electronic component structure, by pushing the second electronic component fixed. to the mounting head on the flux of the electrode of the electronic component structure which is disposed on the second stage portion;
- xvi. heating the electronic component structure which is disposed on the second stage portion and the second electronic component by the first heater of the second stage portion and the second heater of the mounting head at the first temperature, in a state that a temperature of the first stage portion is set to the second temperature which is lower than the first temperature which a reflow temperature of the solder; and
- xvii. cooling to the second temperature which is lower than the first temperature, to connect an electrode of the electronic component structure which is disposed on the second stage portion and the solder electrode of the second electronic component, after heating.

