claims

1. Receiving means for receiving and mounting of wafers with the following features:

- a mounting surface (1o) of a monolithic receiver (1),

- a plurality of openings (2), which penetrate the mounting surface (1o), for mounting of the wafer on the mounting surface (1o) and

- compensation means (3, 4, 5, 6) for active, especially locally controllable, at least partial compensation of local and/or global distortions of the wafer.

2. Receiving means as claimed in Claim 1, wherein the temperature of the mounting surface (1o) can be locally influenced by the compensation means (3, 4, 5, 6).

3. Receiving means as claimed in one of the preceding claims, wherein the strain of the mounting surface (1o) can be locally influenced by the compensation means (3, 4, 5, 6), especially by arrangement of piezoelements (4) which can preferably be individually activated on one back (1r) of the mounting surface (1o).

4. Receiving means as claimed in one of the preceding claims, wherein the shape of the mounting surface (1o) can be locally influenced by the compensation means (3, 4, 5, 6), especially by preferably mechanical action in one Z direction.

5. Receiving means as claimed in one of the preceding claims, wherein the mounting surface (1o) can be locally exposed to pressure from the back (1r) of the mounting surface (1o) by the compensation means (3, 4, 5, 6), especially hydraulically and/or pneumatically.

6. Receiving means as claimed in one of the preceding claims, wherein the compensation means (3, 4, 5, 6) as a plurality of active control elements (3, 4, 5, 6) in the receiving means, are especially integrated, preferably embedded, into the mounting surface (1o).

7. Receiving means as claimed in Claim 6, wherein each control element (3, 4, 5, 6) or groups of control elements (3, 4, 5, 6) can be activated separately.

8. Device for alignment of a first wafer with a second wafer with the following features:

- a means for determining local alignment errors which have occurred due to strain and/or distortion of the first wafer relative to a second wafer when the first wafer is joined to the second wafer, with a first strain map of the first wafer and/or a second strain map of the second wafer and evaluation means for evaluation of the first and/or second strain maps,

- at least one receiving means as claimed in one of the preceding claims for receiving at least one of the wafers and

- alignment means for alignment of the wafers with consideration of position maps and/or strain maps and simultaneous compensation of the local alignment errors by the compensation means.

9. Method for alignment of a first wafer with a second wafer with the following steps, especially the following sequence:

- detecting a first strain map of the first wafer and/or a second strain map of the second wafer and evaluation of the first and/or second strain maps by evaluation means and determination of the local alignment errors,

- receiving at least one of the wafers on a receiving means as claimed in one of Claims 1 to 7 and

- aligning the wafers with consideration of position maps and/or strain maps and simultaneous compensation of the local alignment errors by the compensation means.

10. Method as claimed in Claim 9, wherein after alignment, there is one detection, especially repeated, detection of position maps and/or strain maps of the first and/or second wafer.

CLAIMS:

1. Method for alignment of a first wafer with a second wafer with the following steps, especially the following sequence:

- detecting a first strain map of the first wafer and/or a second strain map of the second wafer and evaluation of the first and/or second strain maps by evaluation means and determination of the local alignment errors,

- receiving at least one of the wafers on a receiving means for receiving and mounting of wafers with

a) a mounting surface (1o),

b) mounting means for mounting of the wafer on the mounting surface (1o) and

c) compensation means (3, 4, 5, 6) for active, especially locally controllable, at least partial compensation of local and/or global distortions of the wafer,

- aligning the wafers with consideration of the position maps and/or strain maps and simultaneous compensation by the compensation means.

2. Method as claimed in Claim 1, wherein after alignment, there is one detection, especially repeated, detection of position maps and/or strain maps of the first and/or second wafer.

3. Method as claimed in Claim 1, wherein the temperature of the mounting surface (1o) is locally influenced by the compensation means (3, 4, 5, 6).

4. Method as claimed in one of the preceding claims, wherein the strain of the mounting surface (1o) is locally influenced by the compensation means (3, 4, 5, 6), especially by arrangement of piezoelements (4) which can preferably be individually activated on one back

(1r) of the mounting surface (1o).

5. Method as claimed in one of the preceding claims, wherein the shape of the mounting surface (1o) is locally influenced by the compensation means (3, 4, 5, 6), especially by preferably mechanical action in one Z direction.

6. Method as claimed in one of the preceding claims, wherein the mounting surface (1o) is locally exposed to pressure from the back (1r) of the mounting surface (1o) by the compensation means (3, 4, 5, 6), especially hydraulically and/or pneumatically.

7. Method as claimed in one of the preceding claims, wherein the compensation means (3, 4, 5, 6) as a plurality of active control elements (3, 4, 5, 6) in the receiving means, are especially integrated, preferably embedded, into the mounting surface (1o).

8. Method as claimed in Claim 7, wherein each control element (3, 4, 5, 6) or groups of control elements (3, 4, 5, 6) is activated separately.

9. Device for alignment of a first wafer with a second wafer with the following features:

- a means for determining local alignment errors which have occurred due to strain and/or distortion of the first wafer relative to a second wafer when the first wafer is joined to the second wafer, with a first strain map of the first wafer and/or a second strain map of the second wafer and evaluation means for evaluation of the first and/or second strain maps,

- at least one receiving means for receiving of wafers with

a) a mounting surface (1o),

b) mounting means for mounting of the wafer on the mounting surface (1o) and

c) compensation means (3, 4, 5, 6) for active, especially locally controllable, at least partial compensation of local and/or global distortions of the wafer,

- alignment means for alignment of the wafers with consideration of the position maps and/or strain maps and simultaneous compensation by the compensation means.

10. Device as claimed in Claim 9, wherein the temperature of the mounting surface (1o) can be locally influenced by the compensation means (3, 4, 5, 6).

11. Device as claimed in one of the preceding claims, wherein the strain of the mounting surface (1o) can be locally influenced by the compensation means (3, 4, 5, 6), especially by arrangement of piezoelements (4) which can preferably be individually activated on one back (1r) of the mounting surface (1o).

12. Device as claimed in one of the preceding claims, wherein the shape of the mounting surface (1o) can be locally influenced by the compensation means (3, 4, 5, 6), especially by preferably mechanical action in one Z direction.

13. Device as claimed in one of the preceding claims, wherein the mounting surface (1o) can be locally exposed to pressure from the back (1r) of the mounting surface (1o) by the compensation means (3, 4, 5, 6), especially hydraulically and/or pneumatically.

14. Device as claimed in one of the preceding claims, wherein the compensation means (3, 4, 5, 6) as a plurality of active control elements (3, 4, 5, 6) in the receiving means, are especially integrated, preferably embedded, into the mounting surface (1o).

15. Device as claimed in Claim 6, wherein each control element (3, 4, 5, 6) or groups of control elements (3, 4, 5, 6) can be activated separately.