Claims

1. A mounting apparatus for mounting and fixing of a substrate (10) on one structure side (10s) of the substrate (10), which side has structures (11) with a mounting element (3) with a flat mounting surface (3o) for supporting the structures (11) and a suction area (F_2) which penetrates the mounting surface (3o) solely in an outer ring surface (8) for effecting a continuous and controllable fluid flow which suctions the substrate (10), wherein the surface force acting on the substrate (10) can be controlled by changing the suction pressure in a linear relationship.

2. The mounting apparatus as claimed in Claim 1, wherein the outer ring surface (8) which is made especially as a circular ring extends from one peripheral edge (U) of the mounting surface (3o) in the direction of one middle (M) of the mounting surface (3o) and an especially maximum or average ring width (R) of the outer ring surface (8) is less than 1/2, especially less than 1/5, preferably less than 1/10, even more preferably less than 1/100 of a diameter (D_3) of the mounting surface (3o).

3. The mounting apparatus as claimed in one of the preceding claims, wherein the fluid flow is formed by a flow channel which has the following sections:

- in the mounting element (3) a host of suction channels (7) which are made especially as through openings, preferably bores, and which end in the suction area (F_2),
- a fluid chamber (6) which is connected to the suction channels (7) on their channel ends (7e) opposite the suction area (F_2) and
- at least one pressure connection (13) which is provided on the fluid chamber (6) for connection of a controllable aspiration apparatus (14, 15, 16).

4. The mounting apparatus as claimed in one or more of the preceding claims, wherein the suction area (F_2) is adjustable, especially by at least partially closing a part of the suction channels (7).

5. The mounting apparatus as claimed in Claim 3, wherein the fluid chamber 6 is formed by a fluid chamber element 2 which is sealed to the mounting element 3, and by the mounting element 3.

6. The mounting apparatus as claimed in Claim 2, wherein the flow channel in the region of the fluid chamber (6) has a flow cross section which is especially at least 5 times, especially at least 10 times, preferably at least 20 times larger than the suction area (F_2) and/or of the flow cross section (F_1) of the pressure connection (13).

7. The mounting apparatus as claimed in one or more of the preceding claims, wherein the suction area (F_2) is chosen or can be adjusted such that it corresponds essentially to an inflow surface (Z) of a ring gap (17) which has been formed between the mounting surface (3o) and the substrate which is mounted on the mounting surface (3o).

8. The mounting apparatus as claimed in one or more of the preceding claims, wherein the mounting surface (3o) is provided on a projection (3e) of the mounting element (3) whose contour is chosen such that it corresponds essentially the surface contour of the substrates (10) which are to be processed, especially with a diameter (D_3) of the mounting surface (3o) between 200 mm and 450 mm, preferably exactly 200 mm or exactly 300 mm or exactly 450 mm.

9. The mounting apparatus as claimed in one or more of the preceding claims, wherein the mounting surface (3o), especially the projection (3e), is coated with an especially elastic coating (12).

10. The mounting apparatus as claimed in one or more of the preceding claims, wherein a first group of especially at least 10, preferably at least 20, more preferably at least 100, suction channels (7) on a common first circle on the outer ring surface (8) lie especially equidistantly to one another,

11. The mounting apparatus as claimed in Claim 10, wherein a second group of especially at least 10, preferably at least 20 suction channels (7), especially offset to the suction channels (7) of the first group, lies on a common second circle with a smaller radius than the first circle on the outer ring surface (8).

12. A method for mounting and fixing of a substrate (10) on one structure side (10s) of the substrate (10), which side has structures (11) by means of a mounting apparatus with a mounting element (3) with a flat mounting surface (3o) for supporting the structures (11) and a suction area (F_2) which penetrates the mounting surface (3o) solely in an outer ring surface (8) by means of a continuous and controllable fluid flow which suctions the substrate (10), wherein the surface force acting on the substrate (10) can be controlled by changing the suction pressure in a linear relationship.