Claims

1. A lens supporting part (100) for supporting a lens (L) in a surface machining process, in which one (L1) of two opposite side surfaces (L1, L2) of the lens (L) is processed, wherein the lens supporting part (100) comprises

- a plurality of support elements (110) being relatively moveable with respect to each other and together forming a lens seat (120) with a curvature for supporting the lens (L) on its other side surface (L2) against forces caused in the surface machining process, and

- an adjustment mechanism (130) for displacing at least some of the plurality of support elements (110) relatively to each other during processing to adjust the curvature of the lens seat (120) to a defined curvature independently from a lens (L) being seated on the support elements (110).

2. The lens supporting part (100) according to claim 1, wherein the adjustment mechanism (130) is configured to move at least some of the plurality of support elements (110) independently from each other to obtain the defined curvature, and/or

wherein the adjustment mechanism (130) is configured such that at least one, preferably each, of the support elements (110) is relatively movable to a lens (L) being seated on the support elements (110).

3. The lens supporting part (100) according to claim 1 or claim 2, wherein the adjustment mechanism (130) is configured to move, preferably slide, the respective support elements (110) in a direction, which is transverse, preferably orthogonal, to the lens seat (120) and/or that is a direction parallel to a holding force for holding the lens (L) on the lens supporting part (100), to adjust the curvature of the lens seat (120).

4. The lens supporting part (100) according to any one of claims 1 to 3, wherein the support elements (110) each have a distal end (111), preferably each of the distal ends (111) together forming the lens seat (120), wherein preferably the distal ends (111) each comprise or are made of an elastic material for supporting the lens (L), and wherein preferably the support elements (110) each extend,

preferably along a longitudinal axis, between the distal end (111) and a proximal end (112) for being coupled to the adjustment mechanism (130).

5. The lens supporting part (100) according to any one of claims 1 to 4, wherein at least one of the support elements (110), preferably at its distal end (111), forms an outer circumferential sealing edge (113) of the lens seat (120) to allow for a circumferential sealing of a lens (L) being seated on the lens seat (120), wherein preferably the at least one support element (110) forming the outer circumferential sealing edge (113) is fixed relatively to other support elements (110) and/or to a lens (L) being seated on the support elements (110).

6. The lens supporting part (100) according to any one of claims 1 to 5, wherein the lens seat (120) is configured to be fluidly connectable to a vacuum unit (200) or the lens supporting part (100) further comprising a vacuum unit (200) that is fluidly connected to the lens seat (120) to apply a vacuum in a suction space (210) between the lens seat (120) and a lens (L) being seated on the lens seat (120), preferably for creating a holding force for holding the lens (L) on the lens seat (120), and wherein preferably vacuum passages (115) are formed between at least some of the support elements (110) for connecting the vacuum unit (200) with the lens seat (120) and preferably with the suction space (210).

7. The lens supporting part (100) according to any one of claims 1 to 6, wherein the adjustment mechanism (130) is configured to be connectable to at least one actuator (300) or wherein the adjustment mechanism (130) comprises at least one actuator (300), such as an electric motor or pneumatic cylinder, preferably for displacing the support elements (110) relatively to each other, and/or

wherein the adjustment mechanism (130) comprises a blocking part that is movable between a first position, where the support elements (110) are fixed in their relative position to each other and preferably to a lens (L) being seated on the lens seat (120), and a second position, where the support elements (110) are relatively movable with respect to each other and preferably to a lens (L) being seated on the lens seat (120), wherein preferably the blocking part is a movable clamp.

8. The lens supporting part (100) according to any one of claims 1 to 7, wherein the adjustment mechanism (130) further comprises a connecting mechanism (140), preferably for each of the support elements (110) to be moved, to transmit, preferably directly or indirectly, an actuation force of an, preferably the, actuator (300) to the respective support element (110), preferably such that said support element (110) is linearly moved.

9. The lens supporting part (100) according to any one of claims 1 to 8, wherein the support elements (110) are formed and/or arranged in a ring shape, preferably with a plurality of ring diameters and more preferred coaxially arranged to form the lens seat (120).

10. A system (500) for surface processing of at least one of two opposite side surfaces (L1, L2) of a lens (L), comprising

- a lens supporting part (100) for supporting the lens (L) during the surface machining process according to any one of claims 1 to 9, and
- a surface processing unit (510) for processing the one side surface (L1) of the lens (L), such as a lens cutting or lens polishing device;
- a surface information supply unit (520) for supplying a geometry of the other side surface (L2) of the lens (L), such as a camera, a pressure sensor, a laser sensor or a database;
- a control unit (530) for determining and setting a defined curvature of the lens seat (120) based on the supplied geometry of the other side surface (L2) of the lens (L), and for controlling the adjustment mechanism (130) to displace the support elements (110) relative to each other to obtain the defined curvature of the lens seat (120).

11. The system (500) according to claim 10, wherein the control unit (530) is configured to preferably continuously determine and set the defined curvature of the lens seat (120) preferably further based on detected process parameters, like mechanical stresses occurring during the processing step, and/or a desired shape for the finished lens (L).

12. The system (500) according to claim 10 or claim 11, wherein the system (500) comprises a spindle (540) for rotating the lens supporting part (100) during the surface machining process, wherein the lens supporting part (100) and the

spindle (540) are arranged coaxially and/or are detachably coupled to each other.

13. A method for surface processing at least one of two opposite side surfaces (L1, L2) of a lens (L), comprising:

- providing a system (500) for surface processing at least one of two opposite side surfaces (L1, L2) of a lens (L) according to any one of claims 10 to 12;

- supplying a geometry of the other side surface (L2) of the lens (L), preferably with the surface information supply unit (520);

- determining and setting a defined curvature of the lens seat (120) based on the supplied geometry of the other side surface (L2) of the lens (L), preferably with the control unit (530);

- adjusting the curvature of the lens seat (120) independently from a lens (L) being seated thereon to obtain the defined curvature of the lens seat (120), preferably with the adjustment mechanism (130);

- supporting the lens (L) with its other side surface (L2) on the lens seat (120) with its defined curvature;

- preferably attaching the lens (L) to the lens seat (120) by activating a suction force or vacuum as a holding force, preferably with the vacuum unit (200), and preferably centring the lens (L) on the lens seat (120); and

- processing the at least one side surface of the lens (L) to a desired shape, preferably with the surface processing unit (510).

14. The method according to claim 13, wherein the method further comprises, during the processing step, the steps of:

- continuously determining and setting the defined curvature of the lens seat (120) further based on detected process parameters, like mechanical stresses occurring during the processing step, positional information (311) determined by sensors of the actuators, and/or a desired shape for the finished lens (L), preferably such that a curvature of the other side surface (L2) of the lens (L) at the beginning of the processing is maintained, and

- adjusting the curvature of the lens seat (120) independently from the lens (L) being seated thereon to obtain the defined curvature of the lens seat (120).

15. The method according to any one of claims 13 or 14, wherein the processing step comprises a lens surface rough cutting step, where the lens (L) is secured on both side surfaces (L1, L2) between the lens supporting part (100) and an additional holding device, which is preferably arranged opposite of the lens supporting part (100) with respect to the lens (L), and a subsequent finishing step, where the lens (L) is secured only by the lens supporting part (100).