CLAIMS

1. An automated production line for the production of ophthalmic lenses, in particular contact lenses such as soft contact lenses, for example silicone hydrogel contact lenses, the production line comprising:

- a production line front end (1) comprising:
    - a first injection-molding machine (10) arranged in the production line and configured to concurrently produce a plurality of front curve plastic lens molds (FCM) within a predetermined cycle time of less than ten seconds, in particular less than five seconds, and preferably in two to five seconds;
    - a second injection-molding machine (12) arranged in the production line and configured to concurrently produce a corresponding plurality of base curve plastic lens molds (BCM) within the same predetermined cycle time of less than ten seconds, in particular less than five seconds, and preferably in two to five seconds;
    - a casting module (14) comprising
        - a filling station (144) configured to dose a predetermined amount of lens-forming material into a predetermined number of the front curve plastic lens molds (FCM),
        - a capping station (145) configured to place a corresponding number of the base curve plastic lens molds (BCM) having the same age as the predetermined number of front curve plastic lens molds (FCM) on the predetermined number of front curve plastic lens molds (FCM) containing the predetermined amount of lens-forming material, to form a corresponding number of closed plastic lens molds (BCM/FCM) containing the lens-forming material;
    - a first transfer robot (1470) configured to transfer the corresponding number of closed plastic lens molds (BCM/FCM) containing the lens-forming material from the casting module (14) to
    - a stacking module (15) comprising
        - a plurality of lens mold trays (150), each lens mold tray (150) configured for being loaded with a multiple of the corresponding number of closed plastic lens molds (BCM/FCM) transferred by the first transfer robot (1470) and containing the lens-forming material,
        - a stacking robot for stacking a plurality of lens mold trays(150) loaded with the closed plastic lens molds containing the lens-forming material to form a stack

(151) of lens mold trays (150);

- a curing module (16) comprising
    - a plurality of ovens (160),
    - a stack handling robot (162),

    wherein each individual oven (160) of the plurality of ovens comprises a heatable chamber (161) sized to accommodate a said stack (151) of lens mold trays (150) carrying the closed plastic lens molds (BCM/FCM) as well as a door for opening and closing the chamber (161), to allow the stack handling robot (162) to load a said stack (151) of lens mold trays (150) loaded with the closed plastic lens molds (BCM/FCM) containing the lens-forming material into the heatable chamber (161) when the door is open,

    to allow the heatable chamber (161) to be heated to a predetermined temperature to effect curing of the lens-forming material to form cured lenses (CL) in the closed plastic lens molds on the individual lens mold trays (150) of the stack (151) when the door is closed,

    and to allow the stack handling robot (162) to remove a said stack (151) of lens mold trays (150) loaded with the closed plastic lens molds (BCM/FCM) containing the cured lenses (CL) from the chamber (161) when the door is open again;
- a destacking module (17) comprising a destacking robot configured to destack the individual lens mold trays (150) from the stack (151) of lens mold trays (150) removed from the chamber (161) of a said oven (160) for allowing access to the closed plastic molds (BCM/FCM) of each individual lens mold tray (150);
- a second transfer robot (180) configured to transfer a predetermined number of the closed plastic lens molds (BCM/FCM) containing the cured lenses (CL) from a said individual lens mold tray (150) to
- a demolding and delensing module (18) comprising
    - a demolding station (1813, 1820) configured to open the predetermined number of closed plastic lens molds (BCM/FCM) by separating the base curve plastic lens molds (BCM) and the front curve plastic lens molds (FCM) from each other, with the cured lenses adhering either to the base curve plastic lens molds (BCM) or to the front curve plastic lens molds (FCM),
    - a delensing station (1817, 1827) configured to release the cured lenses (CL) from the base curve plastic lens molds (BCM) or from the front curve plastic lens molds (FCM),

- a transfer gripper (TG2) configured to transfer the cured lenses (CL) released from the delensing station to a treatment carrier tray (200);

- a production line back end (2) comprising:

- a treatment module (20) for a liquid bath treatment of the cured lenses (CL) carried by the treatment carrier tray (200) to obtain the ophthalmic lenses;

- an inspection module (21) for the inspection of the ophthalmic lenses; and

- a primary packaging module (22) for packaging those ophthalmic lenses that have successfully passed the inspection in primary packaging containers,

wherein

- either the inspection module (21) comprises

a closed-loop rail (210) having a geometric shape that can be freely determined so as to fit in the space defined by a room where the closed-loop rail (210) is to be arranged,

a plurality of shuttles (211) arranged on the closed-loop rail (210), each shuttle (211) carrying a plurality of inspection cuvettes (2110) arranged thereon;

a plurality of inspection stations (2100 – 21010) arranged along the closed-loop rail (210),

- or the individual ovens (160) of the curing module (16) are arranged in a pattern that can be freely determined so as to fit in the space defined by a room where the ovens (160) are to be arranged, and the stack handling robot (162) is arranged on a track that is shaped to allow the stack handling robot (162) to load a said stack (151) of lens mold trays (150) into and to remove a said stack (151) of lens mold trays (150) from the heatable chamber (161) of each individual oven (160) of the plurality of ovens,

- or both.

2. The production line according to claim 1,

wherein the first injection-molding machine (10) comprises a first tool half (101) and a second tool half (102), the first tool half (101) and the second tool half (102) being movably arranged relative to one another between a closed position for injection-molding of the front curve plastic molds (FCM) and an open position for removal of the molded front curve plastic molds (FCM),

wherein the first tool half (101) comprises a first tooling plate (1013) to which a plurality of individual first sleeves (1014) are pre-mounted, each of the individual first sleeves (1014) having an individual optical tool insert (1015) mounted thereto that determines the shape of a

concave optical front surface of the front curve plastic lens mold (FCM) formed by the individual optical tool insert (1015),

and wherein the second tool half (102) comprises a second tooling plate (1023) to which a plurality of individual second sleeves (1024) are pre-mounted, each of the individual second sleeves (1024) having an individual back piece insert (1025) mounted thereto that determines the shape of a convex back surface of the front curve plastic lens mold (FCM) formed by the individual back piece insert (1025),

wherein the first tool half (101) further comprises a first slot (1012) accommodating the first tooling plate (1013), the first slot (1012) allowing to mount the first tooling plate (1013) by sliding the first tooling plate (1013) into the first slot (1012) and then fixing the first tooling plate (1013), and allowing to demount the first tooling plate (1013) by unfixing the first tooling plate (1013) and then pulling the first tooling plate (1013) out of the first slot (1012),

and wherein the second tool half (102) further comprises a second slot (1022) accommodating the second tooling plate (1023), the second slot (1022) allowing to mount the second tooling plate (1023) by sliding the second tooling plate (1023) into the second slot (1022) and then fixing the second tooling plate (1023), and allowing to demount the second tooling plate (1023) by unfixing the second tooling plate (1023) and then pulling the second tooling plate (1023) out of the second slot (1022);

and wherein the second injection-molding machine (12) comprises a third tool half (121) and a fourth tool half (122), the third tool half (121) and the fourth tool half (122) being movably arranged relative to one another between a closed position for injection-molding of the base curve plastic lens molds (BCM) and an open position for removal of the molded base curve plastic lens molds (BCM),

wherein the third tool half (121) comprises a third tooling plate to which a plurality of individual third sleeves are pre-mounted, each of the individual third sleeves having an individual optical tool insert mounted thereto that determines the shape of a convex optical front surface of the base curve plastic lens mold formed by the individual optical tool insert,

and wherein the fourth tool half (122) comprises a fourth tooling plate to which a plurality of individual fourth sleeves are pre-mounted, each of the individual fourth sleeves having an individual back piece insert mounted thereto that determines the shape of the concave back surface of the base curve plastic lens mold formed by the individual back piece insert,

wherein the third tool half (121) further comprises a third slot accommodating the third tooling plate, the third slot allowing to mount the third tooling plate by sliding the third tooling

plate into the third slot and then fixing the third tooling plate, and allowing to demount the third tooling plate by unfixing the third tooling plate and then pulling the third tooling plate out of the third slot,

and wherein the fourth tool half (122) further comprises a fourth slot accommodating the fourth tooling plate, the fourth slot allowing to mount the fourth tooling plate by sliding the fourth tooling plate into the fourth slot and then fixing the fourth tooling plate, and allowing to demount the fourth tooling plate by unfixing the fourth tooling plate and then pulling the fourth tooling plate out of the fourth slot.

3. The production line according to claim 2,
wherein the first tool half (101) comprises
- a first fixed block (1010) comprising the first slot (1012) accommodating the first tooling plate (1013) to which the individual first sleeves (1014) are pre-mounted,
- a first alignment plate (1011) releasably mounted to the first fixed block (1010), the first alignment plate (1011) being provided with a plurality of separate first through-openings (1016) , with each separate first through-opening (1016) of the first alignment plate (1011) accommodating therein one individual first sleeve (1014) of the plurality of individual first sleeves (1014) for aligning the one individual first sleeve (1014), the first alignment plate (1011) being movable away from the first fixed block (1010) when being unmounted from the first fixed block (1010) to allow for sliding the first tooling plate (1013) into the first slot (1012) or pulling the first tooling plate (1013) out of the first slot (1012);
and wherein the second tool half (102) comprises
- a second fixed block (1020) comprising a plurality of hot runner pipes (1026) arranged therein for the injection of a thermoplastic material, the hot runner pipes (1026) extending out of the second fixed block (1020) towards the first tool half (101),
- a mounting plate (1021) releasably mounted to the second fixed block (1020), the mounting plate (1021) comprising the second slot (1022) accommodating the second tooling plate (1023) with the pre-mounted individual second sleeves (1024), the mounting plate (1021), the second tooling plate (1023) and the individual second sleeves (1024) each comprising hot runner through-holes accommodating therein the hot runner pipes extending out of the second fixed block (1020), the mounting plate (1021) being movable away from the second fixed block (1020) when being unmounted from the second fixed block (1020) to allow for sliding the second tooling plate (1023) into the second slot (1022) or pulling the second tooling plate (1023) out of the second slot (1022),

- a second alignment plate (1027) movably mounted towards and away from the mounting plate (1021), the second alignment plate (1027) being provided with a plurality of separate second through-openings (1028), with each separate second through-opening (1028) accommodating therein one individual second sleeve (1024) of the plurality of individual second sleeves (1024) for aligning the one individual second sleeve (1024).

4. The production line according to any one of claims 2 or 3,
wherein the third tool half (121) comprises
- a third fixed block comprising a plurality of hot runner pipes arranged therein for the injection of a thermoplastic material, the hot runner pipes extending out of the third fixed block towards the fourth tool half,
- a mounting plate releasably mounted to the third fixed block, the mounting plate comprising the third slot accommodating the third tooling plate with the pre-mounted individual third sleeves, the mounting plate, the third tooling plate and the individual third sleeves each comprising hot runner through-holes accommodating therein the hot runner pipes extending out of the third fixed block, the mounting plate being movable away from the third fixed block when being unmounted from the third fixed block to allow for sliding the third tooling plate into the third slot or pulling the third tooling plate out of the third slot,
- a third alignment plate movably mounted towards and away from the mounting plate, the third alignment plate being provided with a plurality of separate third through-openings, with each separate third through-opening accommodating therein one individual third sleeve of the plurality of individual third sleeves for aligning the one individual third sleeve;
and wherein the fourth tool half (122) comprises
- a fourth fixed block comprising the fourth slot accommodating the fourth tooling plate to which the individual fourth sleeves are pre-mounted,
- a fourth alignment plate releasably mounted to the fourth fixed block, the fourth alignment plate being provided with a plurality of separate fourth through-openings, with each separate fourth through-opening of the fourth alignment plate accommodating therein one individual fourth sleeve of the plurality of individual fourth sleeves for aligning the one individual fourth sleeve, the fourth alignment plate being movable away from the fourth fixed block when being unmounted from the fourth fixed block to allow for sliding the fourth tooling plate into the fourth slot or pulling the fourth tooling plate out of the fourth slot.

5. The production line according to any one of the preceding claims, wherein the production line front end further comprises:
- a front curve plastic lens mold buffer module (11) arranged between the first injection-molding machine (10) and the casting module (14), the front curve plastic lens mold buffer module (11) being configured to store the front curve plastic lens molds (FCM) removed from the first injection-molding machine (10) for a first predetermined cooling time period at predetermined environmental conditions until the front curve plastic molds (FCM) are transferred to the casting module (14);
- a base curve plastic lens mold buffer module (13) arranged between the second injection-molding machine (12) and the casting module (14), the base curve plastic lens mold buffer module (13) being configured to store the base curve plastic lens molds (BCM) removed from the second injection-molding machine (12) for a second predetermined cooling time period at the same predetermined environmental conditions as the front curve plastic lens molds (FCM) until the base curve plastic lens molds (BCM) are transferred to the casting module (14);
wherein the casting module (14) is configured to have the same predetermined environmental conditions as have the base curve plastic mold buffer module (13) and the front curve plastic mold buffer module (11), and wherein the capping station (145) is configured to place only such base curve plastic lens molds (BCM) onto the front curve plastic lens molds (FCM) for which the same time period has elapsed between the removal of the front curve plastic lens molds (FCM) from the first injection-molding machine and the removal of the base curve plastic lens molds (BCM) from the second injection-molding machine.

6. The production line according to any one of the preceding claims, wherein the casting module (14) further comprises a toric angle verification station (146) arranged downstream of the capping station, the toric angle verification station comprising a camera (1460).

7. The production line according to any one of the preceding claims, wherein the demolding and delensing module comprises one or both of
- a front curve demolding and delensing branch (181) for opening the closed plastic lens molds (BCM/FCM) containing the cured lenses (CL) and for picking the cured lenses (CL) up from the front curve plastic lens molds (FCM);
- a base curve demolding and delensing branch (182) for opening the closed plastic lens

molds (BCM/FCM) containing the cured lenses (CL) and for picking the cured lenses (CL) up from a temporary carrier;

wherein the front curve demolding and delensing branch (181) comprises

- a lens pre-release station (1810) comprising mechanical stamps (1812) for pressing against the back surface of the base curve plastic lens (BCM) molds to release the cured lenses (CL) from the base curve plastic lens molds (BCM),
- the demolding station (1813) for opening the plastic lens molds (BCM/FCM), and
- the delensing station (1817), the delensing station comprising pins (1818) for pressing against the back surfaces of the front curve plastic lens molds (FCM) to release the cured lenses (CL) from the front curve plastic lens molds (FCM), to allow the released cured lenses (CL) to be transferred by the transfer gripper (TG2) to the treatment carrier tray (200);

wherein the base curve demolding and delensing branch (182) comprises

- the demolding station (1820) for opening the closed plastic lens molds (BCM/FCM), the demolding station (1820) comprising pins (1821) for pressing against the back surfaces of the front curve plastic lens molds (FCM) to release the cured lenses (CL) from the front curve plastic lens molds (FCM);
- the delensing station (1827) comprising receiver grippers (1826) arranged beneath the base curve plastic lens molds (BCM) and ultrasonic horns (1824) for applying ultrasonic waves to the back surfaces of the base curve plastic lens molds (BCM) to release the cured lenses (CL) from the base curve plastic lens molds (BCM) and allow them to be received by the receiver grippers (1826) arranged beneath the base curve plastic lens molds (BCM), to allow the received cured lenses (CL) to be transferred by the transfer gripper (TG2) to the treatment carrier tray (200).

8. The production line according to any one of the preceding claims, wherein the treatment module (20) of the production line back end (2) comprises:

- a treatment carrier tray stacking station (201) for stacking a plurality of individual treatment carrier trays (200) one above the other to form a stack (202) of treatment carrier trays carrying the cured lenses (CL);
- a plurality of treatment baths (204, 205), each treatment bath (204, 205) of the plurality of treatment baths (204, 205) comprising a tank (2040, 2050) sized to accommodate a said stack (202) of treatment carrier trays (200) and containing a treatment liquid (2041, 2051) selected from the group of water, an organic extraction liquid, a coating liquid, or mixtures

thereof;
- a handling robot (203) configured to pick the stack (202) of treatment carrier trays (200) and to place the said stack (202) of treatment carrier trays (200) into a first treatment bath (204) of the plurality of treatment baths (204, 205) for a predetermined period of time, further configured to remove the said stack (202) of treatment carrier trays (200) from the first treatment bath (204) after the predetermined period of time and lift the stack (202) of treatment carrier trays (200) to a position above the tank (2040) of the first treatment bath (204), further configured to tilt the lifted stack (202) of treatment carrier trays (200) about a pivot shaft (2032) with the tilted stack (202) of treatment carrier trays (200) still being arranged above the tank (2040) of the first treatment bath (204) to allow the treatment liquid (2041) remaining in the stack (202) of treatment carrier trays (200) to flow back from the tilted stack (202) of treatment carrier trays (200) into the tank (2040) of the first treatment bath (204), further configured to tilt the lifted stack (202) of treatment carrier trays (200) back, and further configured to move the stack (202) of treatment carrier trays (200) from the first treatment bath (204) to a second treatment bath (205) of the plurality of treatment baths (204, 205) or to an ophthalmic lens transfer station (207) where the individual treatment carrier trays (200) of the stack (202) of treatment carrier trays (200) are destacked and the ophthalmic lenses obtained by the liquid bath treatment of the cured lenses (CL) are transferred from the destacked individual treatment carrier trays (200) to the inspection module (21).

9. The production line according to any one of the preceding claims, wherein:
- the shuttles (211) arranged on the closed-loop rail (210) are self-driving shuttles (211); and
- the plurality of stations (2100 – 21010) arranged along the closed-loop rail comprise the following individual stations arranged along the closed-loop rail (210) in the following sequence

- a cuvette filling station (2100) configured to fill the plurality of cuvettes (2110) with water, the plurality of cuvettes (2110) being arranged on a said shuttle (211) in a handling position,
- a lens insertion station (2101) configured to insert the ophthalmic lenses transferred from the treatment module (20) into the plurality of filled cuvettes (2110) arranged on the shuttles (211), one said ophthalmic lens into one said cuvette (2110),
- a first cuvette tilting station (2106) configured to tilt the plurality of cuvettes (2110) arranged on the shuttle (211) from the handling position to an inspection position,

- a lens inspection station (2107) configured to inspect the ophthalmic lenses in the plurality of cuvettes (2110),
- a first cuvette tilting-back station (2108) for tilting the plurality of cuvettes (2110) containing the inspected ophthalmic lenses from the inspection position back to the handling position,
- an ophthalmic lens transfer station (2109) for transferring those inspected ophthalmic lenses that have successfully passed the inspection to the primary packaging module (22),
- a cuvette cleaning station (21010) for sucking the water from the plurality of cuvettes (2110).

10. The production line according to claim 9, wherein the inspection module (21) further comprises the following stations arranged between the lens insertion station (2101) and the first cuvette tilting station (2106) :

- an initial cuvette tilting station (2102) for tilting the cuvettes (2110) containing the ophthalmic lenses inserted in the lens insertion station (2101) to the inspection position,
- an inversion detection station (2103) configured to detect whether or not an ophthalmic lens contained in the cuvette (2110) is inverted,
- an initial tilting-back station (2104) for tilting the cuvettes (2110) back to the handling position,
- a re-inverting station (2105) for re-inverting ophthalmic lenses which are inverted.

11. A method for the automated production of ophthalmic lenses, in particular contact lenses such as soft contact lenses, for example silicone hydrogel contact lenses, the method being capable of being carried out in a production line according to any one of the preceding claims, the method comprising the steps of:

- concurrently producing a plurality of front curve plastic lens molds (FCM) by injection-molding the front curve plastic lens molds in the production line within a predetermined cycle time of less than ten seconds, in particular less than five seconds, and preferably in two to five seconds;
- concurrently producing a corresponding plurality of base curve plastic lens molds (BCM) by injection-molding the base curve plastic lens molds (BCM) in the production line within the same predetermined cycle time of less than ten seconds, in particular less than five seconds,

and preferably in two to five seconds;
- filling a predetermined amount of a lens-forming material into a predetermined number of the front curve plastic lens molds (FCM);
- placing a corresponding number of base curve plastic lens molds (BCM) having the same age as the predetermined number of front curve plastic lens molds (FCM) onto the front curve plastic lens molds (FCM) containing the lens-forming material to form a corresponding number of closed plastic lens molds (BCM/FCM) containing the lens-forming material;
- transferring the corresponding number of closed plastic lens molds (BCM/FCM) containing the lens-forming material and placing them onto a lens mold tray (150);
- stacking a plurality of lens mold trays (150) loaded with the closed plastic lens molds containing the lens-forming material to form a stack (151) of lens mold trays (150);
- loading the stack (151) of lens mold trays (150) loaded with the plastic lens molds (BCM/FCM) containing the lens-forming material into a heatable chamber (161) of an individual oven (160) of a plurality of ovens (160) of a curing module (16), each individual oven (160) comprising the heatable chamber (161);
- heating the chamber (161) of the individual oven (160) to a predetermined temperature to effect curing of the lens-forming material to form cured lenses (CL) in the closed plastic lens molds (BCM/FCM);
- removing a said stack (151) of lens mold trays (150) loaded with the closed plastic lens molds (BCM/FCM) containing the cured lenses from the chamber (161);
- destacking the individual trays (150) from the stack (151) of lens mold trays (150) removed from the chamber (161) for allowing access to the closed plastic molds (BCM/FCM) of each individual lens mold tray (150);
- transferring a predetermined number of the closed plastic lens molds (BCM/FCM) containing the cured lenses (CL) from a said individual lens mold tray (150) in order for the closed molds (BCM/FCM) being opened and the cured lenses (CL) being released;
- opening the closed lens molds (BCM/FCM) by separating the base curve plastic lens molds (BCM) and the front curve plastic lens molds (FCM) from each other;
- releasing the cured lenses (CL) from the base curve plastic lens molds (BCM) or the front curve plastic lens molds (FCM);
- transferring the released cured lenses (CL) to a treatment carrier tray (200);
- treating the cured lenses (CL) in a treatment bath (204, 205) to obtain the ophthalmic lenses;
- inspecting the ophthalmic lenses by an inspection module (21); and

- packaging those ophthalmic lenses that have successfully passed the inspection in primary packaging containers,

wherein either:

(a) the inspection module (21) comprises:

a closed-loop rail (210) having a geometric shape that can be freely determined so as to fit in the space defined by a room where the closed-loop rail (210) is to be arranged,

a plurality of shuttles (211) arranged on the closed-loop rail (210), each shuttle (211) carrying a plurality of inspection cuvettes (2110) arranged thereon;

a plurality of inspection stations (2100 – 21010) arranged along the closed-loop rail (210),

(b) the individual ovens (160) of the curing module (16) are arranged in a pattern that can be freely determined so as to fit in the space defined by a room where the ovens (160) are to be arranged, and the stack handling robot (162) is arranged on a track that is shaped to allow the stack handling robot (162) to load a said stack (151) of lens mold trays (150) into and to remove a said stack (151) of lens mold trays (150) from the heatable chamber (161) of each individual oven (160) of the plurality of ovens,

(c) or both (a) and (b).

12. The method according to claim 11, wherein ophthalmic lenses having different properties are concurrently manufactured in the production line.

13. The method according to any one of claims 11 or 12 using an apparatus according to any one of claims 2 to 4, wherein in case the ophthalmic lenses to be manufactured by the production line are different from those presently manufactured by the production line, at least one of the first tooling plate (1013), the second tooling plate (1023), the third tooling plate and the fourth tooling plate is pulled out of the first slot (1012), the second slot (1022), the third slot or the fourth slot, respectively, and at least one of a new first tooling plate (1013), a new second tooling plate (1023), a new third tooling plate and a new fourth tooling plate having optical tool inserts (1015) or back pieces (1025) mounted to the respective first sleeves (1014), second sleeves (1024), third sleeves and fourth sleeves pre-mounted thereto is slid into at least one of the first slot (1012), the second slot (1022), the third slot and the fourth slot.

14. The method according to any one of claims 11 to 13, wherein further the toric angle (α) of the base curve plastic molds (BCM) and the front curve plastic molds (FCM) relative to each other is verified prior to transferring the corresponding number of closed plastic lens molds (BCM/FCM) containing the lens-forming material and placing them onto a lens mold tray (150).

15. The method according to any one of claims 11 to 14, further comprising the steps of
- prior to treating the cured lenses (CL) in the treatment bath (204, 205), stacking a plurality of individual treatment carrier trays (200) one above the other to form a stack (202) of treatment carrier trays (200) carrying the cured lenses (CL);
- picking the stack (202) of treatment carrier trays (200) and placing the stack (202) of treatment carrier trays (200) into a first treatment bath (204) for a predetermined period of time, the first treatment bath (204) containing a treatment liquid selected from the group of water, an organic extraction liquid, a coating liquid, or mixtures thereof;
- removing the stack (202) of treatment carrier trays (200) from the first treatment bath (204) after the predetermined period of time and lifting the stack (202) of treatment carrier trays (200) to a position above the first treatment bath (204), and then pivoting the stack (202) about a pivot shaft (2032) with the stack (202) still being positioned above the first treatment bath (204) to allow the treatment liquid remaining in the stack (202) to flow back into the first treatment bath (204), thereafter pivoting the stack (202) back;
- moving the stack (202) of treatment carrier trays (200) to a second treatment bath (205) and placing the stack (202) into the second treatment bath (205), or moving the stack (202) of treatment carrier trays (200) to an ophthalmic lens transfer station (207) and destacking the individual treatment carrier trays (200) and transferring the ophthalmic lenses contained in an individual treatment carrier tray (200) into inspection cuvettes (2110) for inspection of the ophthalmic lenses, one said ophthalmic lens into one cuvette (2110).