CLAIMS

1. A fluid injection system (10, 10a, 10b, 10c) comprising at least one side pocket mandrel (12) having a tubular side wall (14) which encloses a main passage (16) and side pocket (18), the tubular side wall (14) having an interior surface (14a) and an exterior surface (14b), the system (10, 10a, 10b, 10c) further comprising a one-way valve (22) mounted in the side pocket (18), wherein the side pocket mandrel (12) has a first inlet passage (34) which provides a first flow path for flow of fluid between the exterior surface (14b) of the tubular side wall (14) and an inlet (26) of the one-way valve (22), a second inlet passage (36) which provides a second flow path for flow of fluid between the exterior surface (14b) of the tubular side wall (14) and the inlet (26) of the one-way valve (22), a screen (38) which is configured to prevent solid particles from entering the inlet (26) of the one-way valve (22) via the first inlet passage (34), and a closure device (40) which is arranged to block the second inlet passage (36) when fluid pressure at the exterior surface (14b) of the tubular side wall (14) is below a predetermined level and which is configured to move to an open configuration to allow flow of fluid along the second inlet passage (36) when fluid pressure at the exterior surface (14b) of the tubular side wall (14) is at or above the predetermined level.
2. A fluid injection system (10, 10a, 10b, 10c) according to claim 1 wherein the closure device (40) comprises a non-reclosing pressure relief device.
3. A fluid injection system (10, 10a, 10b, 10c) according to claim 1 wherein the closure device (40) comprises a one-way valve.
4. A fluid injection system (10, 10a, 10b, 10c) according to claim 1 wherein the closure device (40) comprises a plug which is retained in the second inlet passage by a frangible retaining mechanism.
5. A fluid injection system (10, 10a, 10b, 10c) according to any preceding claim wherein the screen (38) comprises an elongate filament.
6. A fluid injection system (10, 10a, 10b, 10c) according to any preceding claim wherein the screen (38) comprises a mesh or perforated sheet.
7. A fluid injection system (10, 10a, 10b, 10c) according to any preceding claim wherein the screen (38) is mounted on the exterior surface (14b) of the tubular side wall (14).

8. A fluid injection system (10a) according to any preceding claim wherein the side pocket mandrel (12) comprises a main part (12a) which includes the side pocket (18) and a first portion (16a) of the main passage (16), and an auxiliary part (47) which comprises a second portion (16b) of the main passage (16), the main part (12a) and the auxiliary part (47) being releasably connected together by means of corresponding connection formations (48) so that the first portion (16a) and second portion (16b) of the main passage (16) form a continuous path for flow of fluid through the side pocket mandrel (18).
9. A fluid injection system (10a) according to claim 8 wherein the screen (38) is mounted on the auxiliary part (47).
10. A fluid injection system (10c) according to any preceding claim wherein the second inlet passage (36) is connected to the first inlet passage (34), so that fluid flowing from the exterior surface (14b) of the tubular side wall (14) to the inlet (26) of the one-way valve (22) via the second inlet passage (36) first passes along the second inlet passage (36), then along a portion of the first inlet passage (34) to the inlet (26) of the one-way valve (22).
11. A fluid injection system (10c) according to any preceding claim wherein the one-way valve (22) in the side pocket (18) is a main one-way valve (22), and the system (10, 10a, 10b, 10c) is provided with an auxiliary one-way valve (50) in the first inlet passage (34) so that fluid flowing along the first inlet passage (34) to the inlet (26) of the main one-way valve (22) passes through the screen (38) before entering the auxiliary one-way valve (50).
12. A fluid injection system (10c) according to claim 11 wherein the auxiliary one-way valve (50) is mounted on the side pocket mandrel (12) outside of the side pocket (12).
13. A fluid injection system (10c) according to claims 10 and 11 or 12 wherein the auxiliary one-way valve (50) is located in the first inlet passage (34) such that fluid flowing from the exterior surface (14b) of the tubular side wall (14) to the inlet (26) of the main one-way valve (22) via the second inlet passage (36) first passes along the second inlet passage (36), then into the first inlet passage (34), though the auxiliary one-way valve (50) and then to the inlet (26) of the main one-way valve (22).
14. A fluid injection system (10, 10a, 10b, 10c, 10d, 10e) comprising at least one side pocket mandrel (12) having a tubular side wall (14) which encloses a

main passage (16) and a side pocket (18), the tubular side wall (14) having an interior surface (14a) and an exterior surface (14b), the system (10, 10a, 10b, 10c, 10d, 10e) further comprising a one-way valve (22) mounted in the side pocket (18), wherein the side pocket mandrel (12) has an inlet passage (34) which provides a flow path for flow of fluid between the exterior surface (14b) of the tubular side wall (14) and the inlet (26) of the one-way valve (22), and a screen (38) which is configured to prevent solid particles from entering the inlet (26) of the one-way valve (22) via the inlet passage (34), and which is mounted on the exterior surface of the tubular side wall (14) of the side pocket mandrel (12) and extends around at least a portion of the circumference thereof.

15. A fluid injection system (10, 10a, 10b, 10c,10d, 10e) according to claim 14 wherein the screen (38) comprises an elongate filament.
16. A fluid injection system (10, 10a, 10b, 10c, 10d, 10e) according to claim 14 wherein the screen (38) comprises a mesh or perforated sheet.
17. A fluid injection system (10b, 10d) according to any one of claims 14 - 16 wherein the side pocket mandrel (12) comprises a main part (12a) which includes the side pocket (18) and a first portion (16a) of the main passage (16), and an auxiliary part (47) which comprises a second portion (16b) of the main passage (16), the main part (12a) and the auxiliary part (47) being releasably connected together by means of corresponding connection formations (48) so that the first portion (16a) and second portion (16b) of the main passage (16) form a continuous path for flow of fluid through the side pocket mandrel (12).
18. A fluid injection system (10b, 10d) according to claim 17 wherein the screen (38) is mounted on the auxiliary part (47).
19. A fluid injection system according to and one of claims 14 to 18 wherein the screen (38) extends around the entire circumference of a portion of the tubular side wall (14).