CLAIMS

1. A downhole injection valve comprising a housing having housing wall which encloses a interior space, an inlet port, an outlet port, and a valve member which is located in the interior space of the housing and which is movable to control flow of fluid through the interior space from the inlet port to the outlet port, wherein the valve member has a valve body which is provided with a screw thread which extends around and generally radially outwardly of a radially outwardly facing surface of the valve body and which meshes with a corresponding housing screw thread provided on a radially inwardly facing surface of the housing wall, wherein the radially outwardly facing surface of the valve body is not parallel to the radially inwardly facing surface of the housing wall.
2. A downhole injection valve according to claim 1 wherein the height of the screw thread and / or the housing screw thread decreases from a first end to a second end thereof.
3. A downhole injection valve according to claim 1 or 2 wherein the valve member further comprises a first sealing part which is provided on the valve body, the valve member being movable relative to the housing into a first closed position in which the first sealing part sealingly engages with a first valve seat to substantially prevent flow of fluid from the inlet port to the outlet port.
4. A downhole injection valve according to claim 3 wherein the first valve seat is provided in a portion of the housing wall which surrounds either the inlet port or the outlet port.
5. A downhole injection valve according to claim 3 or 4 wherein the valve member further comprises a second sealing part which is provided on the valve body, the valve member being movable relative to the housing into a second closed position in which the second sealing part sealingly engages with a second valve seat to substantially prevent flow of fluid from the inlet port to the outlet port.
6. A downhole injection valve according to any preceding claim wherein the screw thread is provided on a frusto-conical portion of the valve body which has an outer diameter which increases from a first end of the frusto-conical portion towards a second end of the frusto-conical portion, the first end of the

screw thread being at or adjacent to the first end of the frusto-conical portion and the second end of the screw thread being at or adjacent to the second end of the frusto-conical portion.

7. A downhole injection valve according to claim 6 wherein the housing screw thread is provided on a tubular portion of the housing wall which encloses a cylindrical space, the tubular portion of the housing wall having a first portion from which the first end of the housing screw thread extends, and a second portion, from which the second end of the housing screw thread extends.
8. A downhole injection valve according to claim 6 or 7 where dependent on claim 5 wherein the first sealing part is provided at or adjacent to the first end of the frusto-conical portion of the valve body, and the second sealing part is provided at or adjacent to the second end of the frusto-conical portion of the valve body.
9. A downhole injection valve according to any one of claims 1 - 5 wherein the screw thread is provided on a cylindrical portion of the valve body, the first end of the screw thread being at or adjacent to a first end of the cylindrical portion and the second end of the screw thread being at or adjacent to a second end of the cylindrical portion.
10. A downhole injection valve according to claim 9 wherein the housing screw-thread is provided on a tubular portion of the housing wall which encloses a frusto-conical space the diameter of which decreases from the first end of the tubular portion to a second end of the tubular portion, the first end of the housing screw thread extending from the first end of the tubular portion and the second end of the housing screw thread extending from the second end of the tubular portion.
11. A downhole injection valve according to claim 9 or 10 where dependent on claim 5 wherein the first valve seat is provided adjacent to the second end of the tubular portion of the valve housing, and the second valve seat is provided at or adjacent to the first end of the tubular portion of the housing wall.
12. A downhole injection valve according to any preceding claim wherein the inlet port and outlet port are located in the housing wall such that the portion of the housing wall bearing the housing screw thread encloses at least part of a fluid flow path between the inlet port and the outlet port.

13. A downhole injection valve according to claim 12 wherein the inlet port is provided in the tubular portion of the housing wall whilst the outlet port is provided in an end face of the housing.
14. A downhole injection valve according to claim 3 wherein the valve is configured such that rotation of the valve member about an axis of rotation and the meshing of the screw thread of the valve member with the housing screw thread causes the valve member undergo translational movement along the interior space of the housing between the first closed position in which the first sealing part engages with the first valve seat and the valve member substantially prevents flow of fluid from the inlet port to the outlet port and an open position in which the first sealing part is spaced from the first valve seat and flow of fluid from the inlet port to the outlet port is permitted.
15. A downhole injection valve according to claim 5 wherein the valve is configured such that rotation of the valve member in one direction about an axis of rotation and the meshing of the screw thread of the valve member with the housing screw thread causes the valve member undergo translational movement along the interior space of the housing from the first closed position in which the first sealing part engages with the first valve seat and the valve member substantially prevents flow of fluid from the inlet port to the outlet port, to an open position in which the first sealing part is spaced from the first valve seat, the second sealing part is spaced from the second valve seat and flow of fluid from the inlet port to the outlet port is permitted, and then to a second closed position in which the second sealing part engages with the second valve seat and the valve member substantially prevents flow of fluid from the inlet port to the outlet port.
16. A downhole injection valve according to claim 14 or 15 wherein when the valve member is in the first closed position, the screw thread of the valve member engages with the tubular portion of the housing wall and the housing screw thread engages with the valve body.
17. A downhole injection valve according to any preceding claim wherein the valve further comprises a drive apparatus which is operable to drive rotation of the valve member relative to the housing about the axis of rotation.
18. A downhole injection valve according to claim 17 wherein the drive apparatus is connected to the valve member by means of a drive shaft, the

housing being further provided with a bearing assembly which supports the drive shaft.

19. A downhole injection valve comprising a housing having housing wall which encloses a interior space, an inlet port, an outlet port, and a valve member which is located in the interior space of the housing and which is movable to control flow of fluid through the interior space from the inlet port to the outlet port, the valve member having a valve body wherein the valve member further comprises a first sealing part which is provided on the valve body, the valve member being movable relative to the housing into a first closed position in which the first sealing part sealingly engages with a first valve seat to substantially prevent flow of fluid from the inlet port to the outlet port, and a second sealing part which is provided on the valve body, the valve member being movable relative to the housing into a second closed position in which the second sealing part sealingly engages with a second valve seat to substantially prevent flow of fluid from the inlet port to the outlet port.
20. A downhole injection valve according to claim 19 wherein the valve body is provided with a screw thread which extends around and generally radially outwardly of the valve body and which meshes with a corresponding housing screw thread provided on the housing wall,
21. A downhole injection valve according to claim 20 wherein the valve is configured such that rotation of the valve member in one direction about an axis of rotation and the meshing of the screw thread of the valve member with the housing screw thread causes the valve member undergo translational movement along the interior space of the housing from the first closed position to an open position in which the first sealing part is spaced from the first valve seat, the second sealing part is spaced from the second valve seat and flow of fluid from the inlet port to the outlet port is permitted, and then to the second closed position.
22. An injection system for injecting fluid into a production tubing of a hydrocarbon well comprising a downhole injection valve according to any preceding claim.
23. An injection system according to claim 22 further comprising a side pocket mandrel in which the downhole injection valve is located.