19. A method for replacing a previously installed valve seat in a valve assembly having a longitudinal axis, comprising the steps of:

accessing a valve seat that was previously placed in a valve seat recess in a valve body,

removing the previously placed valve seat from the valve seat recess,

radially compressing a replacement valve seat and holding the compressed replacement valve seat in a first position that is axially spaced from said valve seat recess,

displacing the compressed replacement valve seat axially from said first position into the valve seat recess.

20. The method of claim 19 wherein the step of radially compressing the replacement valve seat is performed by positioning the replacement valve seat into a valve seat carrier that has a recessed portion that is smaller in diameter than a major diameter of the replacement valve seat.

21. The method of claim 19 comprising the step of removing a diaphragm from the valve to gain access to the valve seat.

22. The method of claim 21 comprising the step of reinstalling a diaphragm into the valve after the replacement valve seat is installed in the valve seat recess.

23. The valve and tool assembly of claim 1 wherein said seat carrier comprises a geometry that allows said seat carrier to be joined by said threaded retainer nut with said valve body in only a single orientation.

24. A valve and tool assembly, comprising:

a valve body having a longitudinal axis, and a valve seat recess,

a valve seat carrier,

a retainer nut,

a valve seat displacement tool,

said retainer nut being operable to join said valve seat displacement tool and said valve seat carrier to said valve body.

25. A valve and tool assembly, comprising:

a valve comprising a longitudinal axis and a valve seat recess,

a valve seat, and

a valve seat displacement tool that is attachable to said valve.

26. The valve and tool assembly of claim 25 wherein said valve seat displacement tool comprises a valve seat installation tool and/or a valve seat extraction tool, which threadably engage with an alignment member that is attachable to said valve.

27. The valve seat and tool assembly of claim 26 wherein said valve seat installation tool threadably engages with said alignment member, said alignment member being threadably connectable with said valve.

28. A valve seat extraction tool assembly comprising a valve seat extraction tool having a threaded portion, and an eccentric alignment member that is adapted to be mounted to a valve body to align said threaded portion eccentrically with a valve seat.

29. The valve seat extraction tool of claim 28 wherein said eccentric alignment member has an alignment axis that is parallel to and radially offset from a centerline of the valve seat when the valve seat extraction tool is mounted to the valve body.

30. The valve seat extraction tool of claim 28 wherein said eccentric alignment member comprises a retainer nut that is adapted to be threadably mated with the valve body, and an eccentric bushing that is at least partially received in said retainer nut.