Claims:

1. A method of operating an isolation valve in a wellbore, comprising:

deploying a work string into the wellbore through a tubular string disposed in the wellbore, wherein:

the work string comprises a deployment string, a shifting tool, and a bottomhole assembly (BHA), and

the tubular string comprises the isolation valve and an actuator spaced from the isolation valve by a length sufficient to accommodate the BHA; and

rotating the actuator using the shifting tool, thereby opening or closing the isolation valve, wherein the isolation valve isolates a formation from an upper portion of the wellbore in the closed position, and

a longitudinal clearance exists between the BHA and a closure member of the isolation valve while rotating the actuator.

2. The method of claim 1, wherein:

the work string is a drill string,

the deployment string is drill pipe,

the BHA comprises a drill bit,

the tubular string is a casing string, and

the method further comprises drilling the wellbore through the formation by injecting drilling fluid through the drill string and rotating the drill bit.

3. The method of claim 2, wherein:

the actuator is located distally from the isolation valve, and

the shifting tool is located along the drill string distal from the drill bit.

4. The method of claim 3, wherein the shifting tool remains in a cased portion of the wellbore during drilling.

5. The method of any preceding claim, wherein the actuator is rotated by rotating the work string.

6. The method of claim 5, further comprising pressurizing the deployment string to engage the shifting tool with the actuator.

7. The method of claim 6, wherein interaction between the shifting tool and the actuator depressurizes the work string in response to the opening or closing of the valve.

8. The method of claim 7, wherein:

the deployment string is pressurized by deploying a blocking member through the deployment string and seating the blocking member in the shifting tool, and

the work string is depressurized by the shifting tool releasing the blocking member.

9. The method of claim 8, the shifting tool disengages from the actuator after the blocking member is released.

10. The method of claim 5, further comprising setting at least a portion of weight of the work string on to the actuator to verify engagement of the shifting tool with the actuator.

11. The method of claim 5, wherein:

the shifting tool comprises a plurality of drivers radially extendable to engage the actuator, and

each driver extends independently to accommodate eccentricity of the actuator.

12. The method of any of claims 1-4, wherein the actuator is rotated by pressurizing the deployment string, thereby extending the shifting tool into engagement with the actuator and rotating the shifting tool and the actuator relative to the rest of the work string.

13. The method of claim 12, wherein the deployment string is pressurized by deploying a blocking member through the deployment string and seating the blocking member in the shifting tool.

14. The method of claim 13, further comprising pumping the blocking member through the seat, wherein the shifting tool disengages from the actuator after the blocking member is released.

15. The method of any preceding claim, wherein:

the actuator is a first hydraulic power sub,

the tubular string further comprises a second hydraulic power sub,

the power subs are hydraulically connected to the isolation valve in a three way switch configuration,

the isolation valve is opened by rotating the first power sub, and

the isolation valve is closed by rotating the second power sub.

16. The method of any preceding claim, wherein the actuator comprises:

a piston in fluid communication with the isolation valve;

a helical profile operable to longitudinally move the piston from a first position to a second position; and

a clutch operable to disengage the helical profile from the piston in response to the piston reaching the second position.

17. The method of any of claims 1 to 15, wherein the actuator comprises:

a mandrel rotatable by the shifting tool; and

a pump operable to pump hydraulic fluid to the isolation valve in response to rotation of the mandrel.

18. The method of claim 17, wherein the actuator further comprises:

a variable volume hydraulic reservoir in fluid communication with an inlet of the pump;

a control valve having an actuator in fluid communication with the isolation valve;

a pressure relief valve in fluid communication with an outlet of the pump and the reservoir; and

a thermal compensation valve in fluid communication with the control valve actuator and the reservoir.

19. The method of any preceding claim, wherein:

the wellbore is a subsea wellbore, and

the actuator accommodates heave of the work string.

20. The method of any of claims 1 to 18, wherein:

the wellbore is a subsea wellbore, and

the shifting tool accommodates heave of the work string.

21. The method of any preceding claim, wherein interaction between the shifting tool and the actuator provides an indication detectable at surface in response to the opening or closing of the isolation valve.

22. The method of any of claims 1 to 14, wherein:

the actuator is a hydraulic power sub,

the tubular string further comprises a toggle sub in fluid communication with the power sub and the isolation valve, and

the method further comprises operating the toggle sub.

~~23. A method of operating an isolation valve in a wellbore, comprising:~~

~~deploying a work string into the wellbore through a tubular string disposed in the wellbore, wherein:~~

~~the work string comprises a deployment string, a shifting tool, and a bottomhole assembly (BHA), and~~

~~the tubular string comprises the isolation valve and an actuator; and~~

~~operating the actuator using the shifting tool, thereby opening or closing the isolation valve,~~

~~wherein:~~

the isolation valve isolates a formation from an upper portion of the wellbore in the closed position, and

interaction between the shifting tool and the actuator provides an indication detectable at surface in response to the opening or closing of the isolation valve.

24. A method of operating an isolation valve in a wellbore, comprising:

deploying a work string into the wellbore through a tubular string disposed in the wellbore, wherein:

the work string comprises a deployment string, a shifting tool, and a bottomhole assembly (BHA), and

the tubular string comprises the isolation valve and first and second actuators; and

operating the first actuator using the shifting tool, thereby opening the isolation valve; and

operating the second actuator using the shifting tool, thereby closing the isolation valve and isolating a formation from an upper portion of the wellbore.

25. An isolation assembly for use in a wellbore, comprising:

an isolation valve operable between an open and a closed position;

an opener power sub having an opener profile for receiving a driver of a shifting tool and operable to open the isolation valve in response to being driven by the shifting tool; and

a closer power sub having a closer profile for receiving the driver and operable to close the isolation valve in response to being driven by the shifting tool.

26. The isolation assembly of claim 25, wherein:

the isolation valve comprises:

a tubular valve housing having a bore therethrough;

a closure member operable to close the bore in the closed position and allow free passage through the bore in the open position; and

a valve piston operable to open and close the closure member,

the opener power sub comprises:

a tubular opener housing having a bore therethrough;

a tubular opener mandrel disposed in the opener housing and having the opener profile; and

an opener piston in fluid communication with the valve piston and operably coupled to the opener mandrel, and

the closer power sub, comprises:

a tubular closer housing having a bore therethrough;

a tubular closer mandrel disposed in the closer housing and having the closer profile; and

a closer piston in fluid communication with the valve piston and the opener piston and operably coupled to the closer mandrel.

27. The isolation assembly of claim 26, wherein:

the opener and closer mandrels are each rotatable relative to the respective opener and closer housings, and

the opener and closer pistons are each operably coupled to the respective opener and closer mandrels such that rotation of the respective mandrels by the shifting tool driver longitudinally moves the pistons.

28. The isolation assembly of claim 27, wherein the longitudinal movement is reciprocation.

29. The isolation assembly of claim 25, wherein the opener and closer power subs each comprise a release operable to receive a release of the shifting tool after operation of the respective power sub, thereby depressurizing the shifting tool.

30. A power sub for use in a wellbore, comprising:

a tubular housing having a bore formed therethrough;

a tubular mandrel disposed in the housing, movable relative thereto, and having a profile formed through a wall thereof for receiving a driver of a shifting tool;

a first piston operably coupled to the mandrel and operable to pump hydraulic fluid to an outlet of the housing; and

a release operable to receive a release of the shifting tool after operation of the power sub, thereby depressurizing the shifting tool.

31. The power sub of claim 30, wherein:

the mandrel is rotatable relative to the housing, and

rotation of the mandrel longitudinally moves the first piston relative thereto.

32. The power sub of claim 31, wherein the release comprises:

a sleeve disposed between the mandrel and the housing, connected to the mandrel by a cam, and having a profile formed through a wall thereof;

a second piston in fluid communication with an inlet of the housing and operable to move the sleeve longitudinally relative to the mandrel from a first position to a second position, and

the profiles are misaligned in the first position and aligned in the second position.

33. A power sub for use in a wellbore, comprising:

a tubular housing having a bore formed therethrough;

a tubular mandrel disposed in the housing and rotatable relative thereto; and

a piston operably coupled to the mandrel such that rotation of the mandrel longitudinally reciprocates the piston relative thereto, thereby pumping hydraulic fluid to an outlet of the housing.

34. A shifting tool for use in a wellbore, comprising:

a tubular housing having a bore formed therethrough and a pocket formed in a wall thereof;

a tubular mandrel disposed in the housing and longitudinally movable relative thereto;

a seat longitudinally connected to the mandrel and radially movable relative thereto between an engaged position for receiving a blocking member and a disengaged position for releasing the blocking member;

an arm pivoted to the housing, moveable relative to the housing between an extended position, a released position, and a retracted position, and disposed in the pocket in the retracted position; and

a cam operably connecting the arm and the mandrel,

wherein:

the arm is movable from the retracted position to the extended position in response to movement of the mandrel relative to the housing,

the arm is further movable from the extended position to the released position in response to further movement of the mandrel relative to the housing, and

the seat is operable to move to the disengaged position when the arm is in the released position.

35. The shifting tool of claim 34, further comprising one or more variable volume hydraulic reservoirs for thermal compensation.

36. The shifting tool of claim 34 or 35, wherein the arm is further movable to a collapsed position in response to engagement of the arm with a top of a profile in the wellbore.