

CLAIMS

WHAT IS CLAIMED IS:

1. A method of operating a wellbore flow control system, the method comprising:
5 running a base pipe into a wellbore on a tubing string;
applying an activation pressure to a flow control housing coupled the base pipe by increasing a fluid pressure in the tubing string;
urging a piston and a plunger in opposite first and second directions by the activation pressure, the piston urged in the first direction from an initial position in the flow control
10 housing to an activated position, and the plunger urged in the second direction to engage the flow control housing and thereby close flow path extending through the flow control housing to the base pipe;
conducting wellbore operations while applying the activation pressure to maintain the plunger engaged with the flow control housing; and thereafter
15 relieving the activation pressure to permit a first biasing member to disengage the plunger from the flow control housing to thereby open the flow path through the flow control housing and to permit a latch to lock the plunger in a disengaged position with respect to the flow control housing.
2. The method of claim 1; further comprising installing an outer sleeve into an access port
20 of the flow control housing, wherein the piston, plunger, first biasing member and latch are all carried by the outer sleeve.
3. The method of claim 1 further comprising urging the plunger in the second direction with a second biasing member to engage the flow control housing while the piston is disposed in the initial position.
- 25 4. The method of claim 3, further comprising shearing a shear member with the activation pressure to permit the first biasing member to counteract a bias of the second biasing member.
5. The method of claim 1, wherein urging the piston in the first direction further comprises engaging ratchet teeth on the piston with ratchet teeth defined within the flow control housing.

6. The method of claim 5, wherein engaging the ratchet teeth on the piston further comprises engaging one-way ratchet teeth such that the piston is locked in an actuated position to lock the plunger in the disengaged position.

7. The method of claim 1, wherein conducting wellbore operations while applying the activation pressure further comprises conducting washdown or circulation operations, and wherein the method further comprises conducting production or injection operations through the flow control housing with the plunger locked in the disengaged configuration.

8. A method of controlling fluid flow in a wellbore, the method comprising:

assembling an isolation plug into a flow control housing of an inflow control device such that a plunger of the isolation plug engages the flow control housing and thereby closes a flow path through the flow control housing;

running the inflow control device into a wellbore on a base pipe fluidly coupled to the flow path through the flow control housing;

applying an activation pressure through the interior passageway of the base pipe;

urging the plunger to maintain engagement with the flow control housing with the activation pressure;

urging a piston to unlock a first biasing member with the activation pressure;

relieving the activation pressure to permit the first biasing member to disengage the plunger from the flow control housing to thereby open the flow path through the flow control housing; and

flowing fluid between the base pipe and the inflow control device through the flow path with the plunger disengaged from the flow control housing.

9. The method of claim 8, wherein assembling the isolation plug into the flow control housing comprises threading an outer sleeve of the isolation plug into an access port defined in the flow control housing.

10. The method of claim 8, where assembling an isolation plug into a flow control housing comprises engaging a seal member between the plunger and the flow control housing.

11. The method of claim 8, wherein unlocking the first biasing member comprises shearing a shear member with the piston and the activation pressure.

12. The method of claim 8, further comprising urging the plunger in a first direction into engagement with the with the flow control housing with a second biasing member.

13. The method of claim 12, further comprising counteracting a bias of the second biasing member in the first direction with a bias of the first biasing member in a second direction opposite the first direction.

14. The method of claim 8, further comprising latching the plunger in the isolation plug in response to applying the activation pressure such that the plunger is maintained in a disengaged position with respect to the flow control housing in response to relieving the activation pressure.

15. A method of controlling fluid flow through an inflow control device; the method comprising:

assembling an isolation plug into a flow control housing of the inflow control device such that a plunger of the isolation plug engages the flow control housing and thereby closes a flow path through the flow control housing;

applying an activation pressure to the flow path;

urging the plunger in a first direction with the activation pressure to maintain engagement between the plunger and the flow control housing;

urging a piston in a second direction with the activation pressure to apply a bias to the plunger in the second direction opposite the first direction; and

- 5 relieving the activation pressure to permit the bias to the plunger in the second direction to disengage the plunger from the flow control housing to thereby open the flow path through the flow control housing.

16. The method of claim 15, wherein assembling the isolation plug into the flow control housing comprises installing the isolation plug through an access port extending
10 to an exterior of the flow control housing.

17. The method of claim 15, wherein urging the piston in the second direction shears a shear member to unlock a first biasing member for biasing the piston in the second direction.

18. The method of claim 17, further comprising biasing the plunger in the first
15 direction with a second biasing member, wherein the first biasing member imparts a greater force to the plunger than the second biasing member.

19. The method of claim 15, further comprising latching the plunger to an outer sleeve of the isolation plug after disengaging the plunger from the flow control housing.

20. The method of claim 15, further comprising running the inflow control device
20 into a wellbore prior to applying the activation pressure and flowing fluid through the inflow control device subsequent to relieving the activation pressure.