WHAT IS CLAIMED IS

1. A gravel pack apparatus for a borehole, comprising:

a body (100) having a body passage communicating from a heel to a toe, the body (100) (100) defining first and second body ports (132A-B) communicating the body passage with the borehole (10), the second body port (132B) defined uphole of the first body port (132A) and disposed in fluid communication via the borehole (10) with the first body port (132A);

an inner string (110) movably deploying in the body passage and defining an outlet port (112), the inner string (110) in a first selective position in the body passage selectively sealing the outlet port (112) with the first body port (132A) and communicating gravel pack slurry to the borehole (10), the inner string (110) moved to a second selective position in the body passage selectively sealing the outlet port (112) with the second body port (132B) and communicating the gravel pack slurry from the inner string (110) to the borehole (10);

a first screen (140, 220) disposed on the body (100) between the first body port (132A) and the toe and disposed in fluid communication via the borehole (10) with the first and second body ports (132A-B), the first screen (140, 220) communicating the body passage with the borehole (10) and passing fluid returns of the gravel pack slurry from the borehole (10) into the body passage; and

a bypass (230) disposed on the body (100) and communicating the body passage on one side of the first body port to another side of the first body port, the bypass passing the fluid returns in the body passage past the outlet port (112) of the inner string (110) selectively sealed with the first body port (132A).

2. The apparatus of claim 1, wherein the bypass (230) comprises a conduit (234) disposed outside the body (100), the conduit (234) having an inlet communicating on the one side of the first body port (132A) and having an outlet communicating on the other side of the first body port (132A).

3. The apparatus of claim 1, wherein the bypass (230) comprises an internal passage (232) defined in the body (100), the internal passage (232) having an inlet communicating on the one side of the first body port (132A) and having an outlet communicating on the other side of the first body port (132A).

4. The apparatus of claim 1, wherein the bypass (230) at the one side of the first body port (132A) comprise a second screen restricting passage of at least some particulate in the fluid returns from entering the bypass (230).

5. The apparatus of claim 1, wherein the first body port (132A) comprises a check valve, a sliding sleeve, a rotating sleeve, a rupture disk, or a screen controlling fluid communication through the first body port (132A).

6. The apparatus of claim 1, wherein the first body port (132A) comprises a closure (240) disposed on the body (100) and selectively opening and closing fluid communication through the first body port (132A).

7. The apparatus of claim 6, wherein the closure (240) comprises a sleeve disposed in the body passage and movable therein between opened and closed conditions relative to the first body port (132A).

8. The apparatus of claim 6, wherein the closure (240) selectively opens and closes fluid communication through the bypass (230).

9. The apparatus of claim 1, wherein the body (100) comprises seats (214) disposed on each side of the first body port (132A), and wherein the inner string (110) comprises seals (114) disposed on each side of the outlet port (112) and sealing with the seats (214).

10. The apparatus of claim 9, wherein the inner string (110) moved to the first selective position in the body passage seals the seals (114) with the seats (214)

and isolates the outlet port (112) in fluid communication with the first body port (132A).

11. The apparatus of claim 10, wherein the bypass (230) comprises an inlet (233) defined in one of the seats (214), and wherein the inner string (110) moved to a third selective position in the body passage seals the seals (114) with the seats (214) and isolates the outlet port (112) in fluid communication with the first body port (132A) and the inlet of the bypass (230).

12. The apparatus of claim 1, wherein the body (100) defines a third body port (124) downhole of the first screen (220) toward the toe, the third body port (124) disposed in fluid communication via the borehole (10) with the first screen (220); and wherein the inner string (110) moved to a third selective position in the body passage seals the outlet port (112) in fluid communication with the third body port (124).

13. The apparatus of claim 12, wherein the third body port (124) comprises a valve permitting fluid flow out the body passage to the borehole (10) and preventing fluid flow from the borehole (10) into the body passage.

14. The apparatus of claim 1, wherein the apparatus comprises a second screen (140B) disposed on the body (100) uphole of the second body port (132B) and disposed in fluid communication via the borehole with the first screen (220), the second screen (140B) communicating the body passage with the borehole (10) and passing the fluid returns of the gravel pack slurry from the borehole (10) into the body passage.

15. The apparatus of claim 1, wherein the apparatus comprises a second screen (140A) disposed on the body between the first and second body ports (132A-B) and disposed in fluid communication via the borehole with the first screen (220), the second screen (140) communicating the body passage with the borehole (10) and passing the fluid returns of the gravel pack slurry from the borehole (10) into the body passage.

16. The apparatus of claim 1, wherein the body (100) comprises an alternative path device (150) disposed along the body (100) and communicating the second body port (132B) with the borehole (10).

17. The apparatus of claim 1, wherein the body (100) comprises another bypass (236) disposed on the body (100) and communicating the body passage on one side of the second body port (132B) to another side of the second body port (132B).

18. The apparatus of claim 1, wherein the body comprises an isolating element disposed uphole of the second body port and isolating portions of the borehole from one another.

19. A gravel pack apparatus for a borehole, comprising:

a body having a body passage communicating from a heel to a toe, the body defining first and second body ports communicating the body passage with the borehole, the second body port defined uphole of the first body port and disposed in fluid communication via the borehole with the first body port;

an inner string movably deploying in the body passage and defining an outlet port, the inner string moved to a first selective position in the body passage selectively sealing the outlet port with the first body port and communicating gravel pack slurry from the inner string to the borehole, the inner string moved to a second selective position in the body passage selectively sealing the outlet port with the second body port and communicating the gravel pack slurry from the inner string to the borehole;

means (140, 220) disposed in fluid communication via the borehole with the first and second body ports for screening fluid returns of the gravel pack slurry from the borehole into the body passage; and

means (230) disposed on the body for bypassing the fluid returns in the body passage from one side of the first body port to another side of the first body port.

20. The apparatus of claim 19, further comprising means (240) for selectively controlling fluid communication of the outlet port through the first body port.

21. The apparatus of claim 20, further comprising means (240) for selectively controlling fluid communication through the means (230) for bypassing the fluid returns.

22. The apparatus of claim 19, wherein the means (230) disposed on the body for bypassing the fluid returns further comprises means for isolating the outlet port in fluid communication with the first body port and an inlet (233) on the one side of the first body port.

23. The apparatus of claim 19, wherein the body defines a third body port downhole of the screening means toward the toe, the third body port disposed in fluid communication via the borehole with the screening means; and wherein the inner string moved to a third selective position in the body passage seals the outlet port in fluid communication with the third body port.

24. The apparatus of claim 19, wherein the body comprises an isolating element disposed uphole the first and second body ports and isolating portions of the borehole from one another.

25. A gravel packing method for a borehole, the method comprising:

deploying an inner string (110) inside a body (100) disposed in a borehole (10), the body (100) having a toe and a heel;

isolating fluid communication of an outlet port (112) on the inner string (110) to a first flow port (132A) in the body (100);

pumping gravel pack slurry in the inner string (110) into the borehole (10) by flowing the gravel pack slurry from the outlet port (112) into the borehole (10) through the first flow port (132A);

flowing fluid returns from the borehole (10) into the body (100) through a first screen (220) disposed on the body (110) between the first flow port (132A) and the toe;

bypassing the fluid returns in the body (100) from downhole to uphole of the sealed outlet port (112) and the first flow port (132A) by communicating the fluid returns through a bypass (230) disposed on the body (100);

isolating fluid communication of the outlet port (112) to a second flow port (132B) in the body (100), the second flow port (132B) defined uphole of the first flow port (132A) and disposed in fluid communication via the borehole (10) with the first flow port (132A); and

pumping the gravel pack slurry in the inner string (110) into the borehole (10) by flowing the gravel pack slurry from the outlet port (112) into the borehole (10) through the second flow port (132B).

26. The method of claim 25, wherein isolating fluid communication of the outlet to the first flow port comprises sealing seals disposed on each side of the outlet port on the inner string against seats disposed on each side of the first flow port inside the body.

27. The method of claim 25, wherein isolating fluid communication of the outlet port to the first flow port comprises selectively opening a closure on the first flow port.

28. The method of claim 27, wherein bypassing the fluid returns through the bypass comprises selectively opening the bypass with the opening of the closure.

29. The method of claim 25, wherein bypassing the fluid returns comprises flowing the fluid returns through the bypass disposed outside the body.

30. The method of claim 25, wherein bypassing the fluid returns comprises flowing the fluid returns through the bypass disposed inside the body.

31. The method of claim 25, further comprising flowing the fluid returns from the borehole into the body through a second screen disposed on the body at least uphole of the first body port and disposed in fluid communication via the borehole with the first screen.

32. The method of claim 25, wherein flowing the gravel pack slurry from the outlet port into the borehole through the second flow port further comprises communicating the gravel pack slurry from the second flow port to the borehole through an alternative path device disposed along the body.

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CLAIM

1. A gravel pack apparatus for a borehole, comprising:

a body (100) having a body passage communicating from a heel to a toe, the body (100) defining first and second body ports (132A-B: Figs. 10A-10C) communicating the body passage with the borehole (10), the second body port (132B) defined uphole of the first body port (132A) and disposed in fluid communication via the borehole (10) with the first body port (132A);

an inner string (110) movably deploying in the body passage and defining an outlet port (112), the inner string (110) in a first selective position in the body passage selectively sealing the outlet port (112) with the first body port (132A) and communicating gravel pack slurry to the borehole (10), the inner string (110) moved to a second selective position in the body passage selectively sealing the outlet port (112) with the second body port (132B) and communicating the gravel pack slurry from the inner string (110) to the borehole (10);

a bypass screen (220: Figs. 10A-B) disposed on the body (100) between the first body port (132A) and the toe and disposed in fluid communication via the borehole (10) with the first and second body ports (132A-B), the first screen (220) communicating the body passage with the borehole (10) and passing fluid returns of the gravel pack slurry from the borehole (10) into the body passage; and

a bypass (230, 232, 234) disposed on the body (100) and communicating the body passage on one side of the first body port (132A) to another side of the first body port (132A), the bypass (230, 232, 234, 236) passing the fluid returns in the body passage past the outlet port (112) of the inner string (110) selectively sealed with the first body port (132A).

2. The apparatus of claim 1, wherein the bypass (230, 232, 234) comprises a conduit (234) disposed outside the body (100), the conduit (234) having an inlet communicating on the one side of the first body port (132A) and having an outlet communicating on the other side of the first body port (132A).

3. The apparatus of claim 1, wherein the bypass (230, 232, 234) comprises an internal passage (232) defined in the body (100), the internal passage (232) having an inlet communicating on the one side of the first body port (132A) and having an outlet communicating on the other side of the first body port (132A).

4. The apparatus of claim 1, wherein the bypass (230, 232, 234) at the one side of the first body port (132A) comprise a second screen restricting passage of at least some particulate in the fluid returns from entering the bypass (230).

5. The apparatus of claim 1, wherein the first body port (132A) comprises a check valve, a sliding sleeve, a rotating sleeve, a rupture disk, or a screen controlling fluid communication through the first body port (132A).

6. The apparatus of claim 1, wherein the first body port (132A) comprises a closure (240) disposed on the body (100) and selectively opening and closing fluid communication through the first body port (132A).

7. The apparatus of claim 6, wherein the closure (240) comprises a sleeve disposed in the body passage and movable therein between opened and closed conditions relative to the first body port (132A).

8. The apparatus of claim 6, wherein the closure (240) selectively opens and closes fluid communication through the bypass (230, 232, 234).

9. The apparatus of claim 1, wherein the body (100) comprises seats (214) disposed on each side of the first body port (132A), and wherein the inner string (110) comprises seals (114) disposed on each side of the outlet port (112) and sealing with the seats (214).

10. The apparatus of claim 9, wherein the inner string (110) moved to the first selective position in the body passage seals the seals (114) with the seats (214) and isolates the outlet port (112) in fluid communication with the first body port (132A).

11. The apparatus of claim 10, wherein the bypass (230) comprises an inlet (233) defined in one of the seats (214), and wherein the inner string (110) moved to a third selective position in the body passage seals the seals (114) with the seats (214) and isolates the outlet port (112) in fluid communication with the first body port (132A) and the inlet of the bypass (230, 232, 234).

12. The apparatus of claim 1, wherein the body (100) defines a third body port (124) downhole of the first screen (220) toward the toe, the third body port (124) disposed in fluid communication via the borehole (10) with the first screen (220); and wherein the inner string (110) moved to a third selective position in the body passage seals the outlet port (112) in fluid communication with the third body port (124).

13. The apparatus of claim 12, wherein the third body port (124) comprises a valve permitting fluid flow out the body passage to the borehole (10) and preventing fluid flow from the borehole (10) into the body passage.

14. The apparatus of claim 1, wherein the apparatus comprises an upper screen (140B: Figs. 10A, 10C) disposed on the body (100) uphole of the second body port (132B) and disposed in fluid communication via the borehole with the first screen (220), the upper screen (140B) communicating the body passage with the borehole (10) and passing the fluid returns of the gravel pack slurry from the borehole (10) into the body passage.

15. The apparatus of claim 1, wherein the apparatus comprises a lower screen (140A: Figs. 10A-B) disposed on the body between the first and second body ports (132A-B) and disposed in fluid communication via the borehole with the first screen (220), the lower screen (140A) communicating the body passage with the borehole (10) and passing the fluid returns of the gravel pack slurry from the borehole (10) into the body passage.

16. The apparatus of claim 1, wherein the body (100) comprises an alternative path device (150) disposed along the body (100) and communicating the second body port (132B) with the borehole (10).

17. The apparatus of claim 1, wherein the body (100) comprises another bypass (236) disposed on the body (100) and communicating the body passage on one side of the second body port (132B) to another side of the second body port (132B).

18. The apparatus of claim 1, wherein the body (100) comprises an isolating element (104) disposed uphole of the second body port (132B) and isolating portions of the borehole (10) from one another.

19. A gravel pack apparatus for a borehole, comprising:

a body (100) having a body passage communicating from a heel to a toe, the body (100) defining first and second body ports (132A-B) communicating the body passage with the borehole (10), the second body port (132B) defined uphole of the first body port (132A) and disposed in fluid communication via the borehole (10) with the first body port (132A);

an inner string (110) movably deploying in the body passage and defining an outlet port (112), the inner string (110) moved to a first selective position in the body passage selectively sealing the outlet port (112) with the first body port (132A) and communicating gravel pack slurry from the inner string (110) to the borehole (10), the inner string (110) moved to a second selective position in the body passage selectively sealing the outlet port (112) with the second body port (132B) and communicating the gravel pack slurry from the inner string (110) to the borehole (10);

means (e.g., lower screen 140A, upper screen 140B, and/or bypass screen 220: Figs. 10A-C) disposed in fluid communication via the borehole (10) with the first and second body ports (132A-B) for screening fluid returns of the gravel pack slurry from the borehole (10) into the body passage; and

means (230, 232, 234) disposed on the body (100) for bypassing the fluid returns in the body passage from one side of the first body port (132A) to another side of the first body port (132A).

20. The apparatus of claim 19, further comprising means (240) for selectively controlling fluid communication of the outlet port (112) through the first body port (132A).

21. The apparatus of claim 20, further comprising means (240) for selectively controlling fluid communication through the means (230, 232, 234) for bypassing the fluid returns.

22. The apparatus of claim 19, wherein the means (230, 232, 234) disposed on the body (100) for bypassing the fluid returns further comprises means for isolating the outlet port (112) in fluid communication with the first body port (132A) and an inlet (233) on the one side of the first body port (132A).

23. The apparatus of claim 19, wherein the body (100) defines a third body port (124) downhole of the screening means (140A, 140B, and/or 220) toward the toe, the third body port (124) disposed in fluid communication via the borehole with the screening means (140A, 140B, and/or 220); and wherein the inner string (110) moved to a third selective position in the body passage seals the outlet port (112) in fluid communication with the third body port (124).

24. The apparatus of claim 19, wherein the body (100) comprises an isolating element (104) disposed uphole the first and second body ports (132A-B) and isolating portions of the borehole (10) from one another.

25. A gravel packing method for a borehole, the method comprising:

deploying an inner string (110) inside a body (100) disposed in a borehole (10), the body (100) having a toe and a heel;

isolating fluid communication of an outlet port (112) on the inner string (110) to a first flow port (132A) in the body (100);

pumping gravel pack slurry in the inner string (110) into the borehole (10) by flowing the gravel pack slurry from the outlet port (112) into the borehole (10) through the first flow port (132A);

flowing fluid returns from the borehole (10) into the body (100) through a bypass screen (220: Figs. 10A-B) disposed on the body (110) between the first flow port (132A) and the toe;

bypassing the fluid returns in the body (100) from downhole to uphole of the sealed outlet port (112) and the first flow port (132A) by communicating the fluid returns through a bypass (230, 232, 234) disposed on the body (100);

isolating fluid communication of the outlet port (112) to a second flow port (132B) in the body (100), the second flow port (132B) defined uphole of the first flow port (132A) and disposed in fluid communication via the borehole (10) with the first flow port (132A); and

pumping the gravel pack slurry in the inner string (110) into the borehole (10) by flowing the gravel pack slurry from the outlet port (112) into the borehole (10) through the second flow port (132B).

26. The method of claim 25, wherein isolating fluid communication of the outlet (112) to the first flow port (132A) comprises sealing seals disposed on each side of the outlet port (112) on the inner string (110) against seats disposed on each side of the first flow port (132A) inside the body (100).

27. The method of claim 25, wherein isolating fluid communication of the outlet port (112) to the first flow port (132A) comprises selectively opening a closure (240) on the first flow port (132A).

28. The method of claim 27, wherein bypassing the fluid returns through the bypass (230, 232, 234) comprises selectively opening the bypass (230, 232, 234) with the opening of the closure.

29. The method of claim 25, wherein bypassing the fluid returns comprises flowing the fluid returns through the bypass (230, 232, 234) disposed outside the body.

30. The method of claim 25, wherein bypassing the fluid returns comprises flowing the fluid returns through the bypass (230, 232, 234) disposed inside the body.

31. The method of claim 25, further comprising flowing the fluid returns from the borehole (10) into the body through a another screen (*e.g.,* lower screen 140A or upper screen 140B: Figs. 10A-C) disposed on the body at least uphole of the first body port (132A) and disposed in fluid communication via the borehole (10) with the first screen (220).

32. The method of claim 25, wherein flowing the gravel pack slurry from the outlet port (112) into the borehole (10) through the second flow port (132B) further comprises communicating the gravel pack slurry from the second flow port (132B) to the borehole (10) through an alternative path device (150) disposed along the body (100).