

CLAIMS

1. An apparatus comprising:
 - a fluidic circuit;
 - 5 a bypass fluidic circuit;
 - a first set of fluid wells;
 - a second set of fluid wells;
 - a first valve having a first valve outlet and a plurality of first well ports, the plurality of first well ports operatively associated with the first set of fluid wells, the first valve selectively
 - 10 fluidly connecting a first well of the first set of fluid wells to the first valve outlet when in a first position and selectively fluidly connecting a second well of the first set of fluid wells to the first valve outlet when in a second position; and
 - a second valve having a second valve outlet, a bypass selector channel, and a plurality of second well ports, the second valve outlet operatively associated with the fluidic circuit, the bypass
 - 15 selector channel operatively associated with the bypass fluidic circuit and the first valve outlet, the second valve selectively fluidly connecting a first well of the second set of fluid wells to the fluidic circuit when in a first well position and selectively fluidly connecting the bypass selector channel to the bypass fluidic circuit when in a bypass position.
- 20 2. The apparatus of claim 1 further comprising a common channel fluidly connecting the first valve outlet to the second valve.
3. The apparatus of claim 1, wherein the second valve is rotatable between a plurality of positions.
- 25 4. The apparatus of claim 1, wherein the second valve selectively fluidly connects the first valve outlet to the fluidic circuit when in a first valve position.
5. The apparatus of claim 1, wherein the second valve selectively fluidly connects a second
- 30 well of the second set of fluid wells to the fluidic circuit when in a second well position.
6. The apparatus of claim 1, wherein the first valve is rotatable between a plurality of positions.
- 35 7. The apparatus of claim 1 further comprising:

an outlet channel fluidly connecting the bypass fluidic circuit and the fluidic circuit to a pump.

8. The apparatus of claim 7, wherein the outlet channel is fluidly connected to a waste outlet.

9. The apparatus of claim 8 further comprising:

a valve array comprising one or more valves disposed along the outlet channel to selectively control flow between the bypass fluidic circuit, the fluidic circuit, the pump, and the waste outlet.

10. The apparatus of claim 1, wherein the bypass fluidic circuit comprises a bypass cache reservoir to hold a first predetermined volume of fluid.

11. The apparatus of claim 1, wherein the fluid circuit comprises a fluidic device and a fluidic cache reservoir, the fluidic cache reservoir holding a second predetermined volume of fluid downstream from the fluidic device.

12. An apparatus comprising:

a fluidic circuit fluidly connected to a flow cell;

a bypass channel;

a first fluid well;

a second fluid well;

a first valve comprising a first valve outlet port and a plurality of first well ports, a first of the plurality of first well ports operatively associated with the first fluid well such that the first valve selectively permits flow from the first fluid well to the first valve outlet port; and

a second valve comprising:

a second valve outlet port fluidly connected to the fluidic circuit,

a bypass port fluidly connected to the bypass channel,

a second valve inlet port fluidly connected to the first valve outlet port,

a second fluid well port fluidly connected to the second fluid well, and

a second valve rotary body to rotate to a plurality of second valve positions such that the second valve selectively permits flow from a selected one of the second fluid well port and the second valve inlet port to the second valve outlet port or from the second valve inlet port to the bypass port.

13. The apparatus of claim 12, wherein the bypass port, the second valve inlet port, and the second fluid well port are arranged in a circumferential pattern, and the second valve rotary body comprises:

5 a second valve selector channel fluidly connecting the second valve outlet port to one of the second valve inlet port or the second fluid well port, and

a bypass selector channel fluidly connecting the second valve inlet port to the bypass port when the second valve rotary body is set at a bypass position.

14. The apparatus of claim 12, wherein the first valve comprises a first valve rotary body to rotate to a plurality of first valve positions such that the first valve selectively controls flow from a selected one of the plurality of first well ports to the first valve outlet port; and

wherein the first valve rotary body comprises a first valve selector channel fluidly connecting a selected one of the plurality of first well ports to the first valve outlet port.

15. The apparatus of claim 12, wherein the second valve selectively fluidly connects the first valve outlet port to the fluidic circuit when in a first valve position.

16. The apparatus of claim 12, wherein the second valve selectively fluidly connects the second fluid well to the fluidic circuit when in one of the second valve positions.

17. The apparatus of claim 12, wherein the second fluid well comprises one of a plurality of second fluid wells, and wherein the second valve includes a plurality of second fluid well ports, each fluidly connected to one of the plurality of second fluid wells.

18. The apparatus of claim 12 further comprising an outlet channel fluidly connecting the bypass channel and the fluidic circuit to a pump.

19. The apparatus of claim 18, wherein the outlet channel is fluidly connected to a waste outlet.

20. The apparatus of claim 19 further comprising a valve array comprising one or more valves disposed along the outlet channel to selectively control flow between the bypass channel, the fluidic circuit, the pump, and the waste outlet.