between the branch line and the first portion of the fluid return line, and a central portion which extends into the branch line.

Preferably an active sonar flow meter is provided to measure the rate of fluid flow along the fluid return line. In this case, the active sonar flow meter is preferably located between the side port and the Coriolis flow meter. The active sonar flow meter may be a clamp-on meter.

Advantageously, an inlet line extends into the drill string from a pump, and a second active sonar flow meter is provided to measure the rate of fluid flow along the inlet line. In this case, the second active sonar flow meter is preferable a clamp-on meter.

There is also~~According to a second aspect of the invention we~~ provided a drilling system including a drill string which extends into a borehole, and a well closure system which contains fluid in the annular space in the borehole around the drill string, the well closure system having a side port whereby controlled flow of fluid out of the annular space in the borehole around the drill string is permitted, the side port being connected to fluid return line which extends from the side port to a fluid reservoir, there being provided in the fluid return line a valve which includes a valve member which is rotatable to restrict flow of fluid along the fluid return line to variable extent.

Preferably the valve includes a valve body, the valve body having a passage with a longitudinal axis which extends from a valve inlet to a valve outlet, the passage forming part of the fluid return line, and wherein the valve member is a generally spherical ball which is mounted in the passage of the valve body. In this case, the valve member preferably includes a central passage which extends through the ball and which has a longitudinal axis, the valve member being rotatable between a closed position in which the longitudinal axis of the central passage extends at around 90º to the longitudinal axis of the passage in the valve body, and an open position in which the longitudinal axis of the central passage is generally parallel to the longitudinal axis of the passage in

the valve body. The cross-section of the central passage perpendicular to its longitudinal axis may taper from a short side to a tall side, the height of the central passage increasing generally linearly from the short side to the tall side.

The ball may be arranged in the valve body such that when rotated from the closed position to the open position, the short side of the central passage is first to open into the passage of the valve body. The cross-section of the central passage perpendicular to its longitudinal axis may have the shape of a sector of a circle.

The valve may be provided with an actuator stem, rotation of which about its longitudinal axis causes rotation of the valve member between the open position and the closed position. In this case, the actuator stem preferably has a pinion portion with a plurality of radial teeth, and the valve is provided with at least one actuator piston with a toothed rod which engages with the pinion portion of the actuator stem so that translational movement of the piston causes rotation of the actuator stem and valve member. The valve may be provided with four actuator pistons each with a toothed rod which engages with the pinion portion of the actuator stem.

The or each piston may be mounted in an actuator housing and engages with the actuator housing so that the actuator housing and piston enclose a control chamber, the actuator housing being provided with a conduit whereby fluid flow into the control chamber.

There is furtherAccording to a third aspect of the invention we provided a valve including a valve member and a valve body having a passage with a longitudinal axis which extends from a valve inlet to a valve outlet, wherein the valve member is a generally spherical ball which is mounted in the passage of the valve body and includes a central passage which extends through the ball and which has a longitudinal axis, the valve member being rotatable between a closed position in which the longitudinal axis of the central passage extends at around

90º to the longitudinal axis of the passage in the valve body, and an open position in which the longitudinal axis of the central passage is generally parallel to the longitudinal axis of the passage in the valve body, wherein the cross-section of the central passage perpendicular to its longitudinal axis tapers from a short side to a tall side, the height of the central passage increasing generally linearly from the short side to the tall side.

There is in addition~~According to a fourth aspect of the invention we~~ provided a drilling system including a drill string which extends into a borehole, and a well closure system which contains fluid in the annular space in the borehole around the drill string, the well closure system having a side port whereby controlled flow of fluid out of the annular space in the borehole around the drill string is permitted, the side port being connected to fluid return line which extends from the side port to a fluid reservoir, the drilling system also including a valve, the valve having an inlet port which is connected to the fluid return line, a first outlet port which is connected to a gas separator apparatus for separating entrained gas from a liquid, a second outlet port which is connected to a solid separator apparatus for separating solid particles from a liquid, wherein the valve is operable to selectively permit flow of fluid from the inlet port to either the first outlet port or the second outlet port whilst never preventing flow of fluid from the inlet port to both of the outlet ports.

Preferably the gas separator has an outlet for liquid which is connected to an inlet of the solid separator.

Preferably the solid separator has an outlet for liquid which is connected to the reservoir.

Advantageously, the solid separator comprises at least one shaker.

An embodiment of the invention will now be described, by way of example only, with reference to the accompanying drawings of which,