RECIPROCATING PUMPS FOR DOWNHOLE DELIQUIFICATION SYSTEMS AND FLUID DISTRIBUTION SYSTEMS FOR ACTUATING RECIPROCATING PUMPS

ABSTRACT

A hydraulic fluid distribution system includes a mechanical switch including a first valve, a first actuation pin extending axially from the first valve, and a second actuation pin extending axially from the first valve. The first valve includes an inlet port, a first outlet port, and a second outlet port. The first valve has a first position with the inlet port in fluid communication with the first outlet port and a second position with the inlet port in fluid communication with the second outlet port. The first actuation pin is configured to move in a first axial direction to transition the first valve from the second position to the first position, and the second actuation pin is configured to move in a second axial direction to transition the first valve from the first position to the second position. In addition, the hydraulic fluid distribution system includes a second valve having a first position that allows fluid communication between the first outlet port of the first valve and a first chamber and a second position that allows fluid communication between the second outlet port of the first valve and a second chamber. The second chamber is in fluid communication with a hydraulic fluid return passage when the second valve is in the first position and the first chamber is in fluid communication with the hydraulic fluid return passage when the second valve is in the second position.

Figure 1