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[U.S. Patent No. 11,668,146](#) entitled “Piston Shut-Off Valve for Rotary Steerable Tool” issued June 9, 2023 to REME, LLC of Conroe, Texas. Invented by Richard Hutton of Avon, United Kingdom. Abstract: A shut-off system and control method for a rotary steerable tool that includes a body having an inner chamber, a piston gallery extending between the inner chamber and a piston port, and an exhaust gallery extending between the inner chamber and an exhaust port. A spool in the inner chamber is movable into a plurality of positions to direct and control the flow of drilling fluid to energize pistons of the rotary steerable tool. The spool includes a spool shaft. A first passage extends through the spool shaft and receives drilling fluid via a spool inlet port in the shaft from a drilling fluid inlet port of the rotary steerable tool. A shut off valve is controlled to rotate on the spool shaft to open and shut the spool inlet port to drilling fluid flow.