

Technology Innovation:

The revolutionary new valve makes a standard diaphragm pump reliably pump high solids and slurries. We are talking about situations with over 18mm sized solids and at more than 65% solids to liquid mixtures. Called the SS model pump, it is Pumping Solutions' performance enhanced version, of a double diaphragm pump.

How is it done?

Nails, long bits of wood, rocky lumps and many other shapes present no problem to the new SS valve. Its innovative design, recently patented, is perhaps the most significant breakthrough in one-way valve design in over 50 years. A high surface sealing area within the new SS valve permits it to wrap over large solids. This ensures that the valves will seal even under the toughest high solids conditions.

Development was conducted in underground conditions. Constant increases to the hole size in the suction foot valve were steadily introduced. Even with 22 mm (7/8") holes in the suction line strainer, and only 32 mm bore (1 1/4") openings within the pump and SS valves, everything operated faultlessly.

Reliability Increased

The double diaphragm pump is the most widely used positive displacement pump on the pumping market. In low, even medium solids environments these pumps are quite reliable, until that longer piece of material, be it a stick, nail or any long solid, jams a ball valve or the flap valve open. The pump is then rendered useless until the valve is manually cleared.

Fitting the new SS valve to the double diaphragm pump has resulted in substantial reliability improvements. The pumps have operated on heavy coal slurries almost continuously for weeks, without valve blockages. The coal mines involved in trials have never seen any diaphragm pump clear their slurry pits like this pump. Normal ball valve pumps had previously failed within minutes in the areas trialed. In comparison, the SS Pump's performance is close to that of the vacuum loading slurry pump but those pumps cannot meet the level of efficiency and safety of a diaphragm pump. The SS Pump is also far cheaper to run and to rent.

Performance Increased

The SS pump also delivers the advantage of increased flow. Designed to pass large solids, it offers far less turbulence to fluids, especially when compared to ball valves. Preliminary tests on the performance of the standard 1.5" pump, have delivered or exceeded a 20% flow increase.



The new valves shown installed on a standard diaphragm pump

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